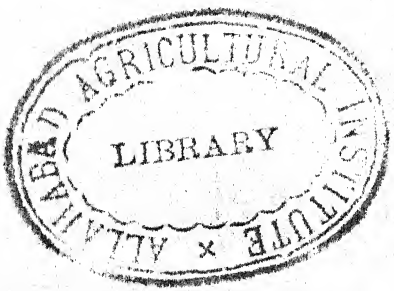
PRINCIPLES OF TEACHING

By W. M. Ryburn and
K. B. Forge



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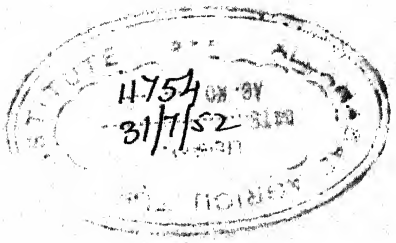

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Part I : The Nature of Teaching

Chapter I

In this book we discuss what the teacher does, what the pupil does, and what is taught, in primary and secondary schools.

The book is written on the basis of experience in Africa and India, and a good many of the illustrations come from Africa ; but the aims of education, which are to help children grow up into fully developed, happy and useful men and women, are the same all over the world ; and so the principles of education are the same wherever the school may happen to be.

The aims will be the same, and therefore the principles the same, whether we are teaching city children or village children, boys or girls. One of our first principles is that we should apply our other principles so as to suit the needs of each particular child we have to teach ; but the principles themselves are founded upon the nature of children, and so they are the same for all children.

To understand the nature of teaching we must understand the proper relations between teacher, pupil, and subject, and what happens between these three when for example a teacher teaches history to Mary and John.

The school is a little world of its own. It is also a part of the greater world outside its walls, and it will always be some kind of a picture, a reflection of that world.

The relations between teacher, pupil and subject will in the long run depend upon the relations between

man and man, and between man and his surroundings, in the world outside the school.

To-day very great changes in these relations are taking place. We may sum them up by saying that ordinary men and women all over the world to-day are beginning to enjoy more and more of two things of which, since the beginning of civilization, they have enjoyed very little.

Those two things are freedom and responsibility.

The peoples of the world are slowly but surely becoming free from the fear of hunger and want, and of 'those set in authority over them', and free also from the long hours of heavy work which in the past have left only the fortunate few with enough time or strength for learning or enjoyment.

At the same time ordinary men and women are taking more and more responsibility for the direction and management of their own lives, of their work, their towns and countries, even of the world as a whole.

These changes are steadily happening all over the world. And in turn they affect what goes on inside the classroom, but here the change takes place more slowly. Reasons for this are easy to find. Yet in many different countries the ideals and principles of teaching are changing in the same direction. At first a few teachers and a few schools in various parts of the world tried to apply the ideas; and now their influence is spreading to teachers everywhere.

We may look more closely at some of the new directions the principles of teaching are taking.

FROM FEAR TO LOVE

Since civilization began, most of the world's work has been done in hope of reward or in fear of punishment.

People worked for fear of going hungry, or in hope of becoming richer and more powerful than their neighbours.

In school we punished children for not working, and encouraged them to compete against one another for marks, prizes and promotions.

In a world where the fear of hunger or the hope of power and money no longer drives men to work, what will make them do the work which has to be done to produce the food, the clothes, the houses we need in order to live ?

The answer is that they will produce these things for the same reason that they produce children. They will work because they want to work, because they will find that work well done brings satisfaction.

There is in every healthy human being a strong desire to do and to make, to work and to play.

The driving force behind this desire is need, the need for food, for mating, and for the society of those without whose help our need for food and mating cannot be satisfied.

Children and grown-up people will indeed work for fear of punishment or in hope of reward. But we have learnt from experience that they will work harder, longer, and more intelligently when the very doing of the work satisfies their desires.

What sort of work satisfies our desires ? Quite simply, work we like doing. What sort of work do we like doing ? Again quite simply, work that we feel is worth doing, and that we feel we can do well.

The teacher's job then is to help the pupils to feel that their work is worth doing, and to help them to learn to do it well.

In our choice of subjects and of methods of teaching we shall no longer be guided by what those in authority

think good for children. Instead, we shall consider first the needs and interests, the experience and the stage of development, of the particular children we have to teach ; and we shall choose as far as possible the subjects which will most interest those children, and the methods which will make these subjects most interesting.

This is by no means to say that all the work must be made easy. Children grow and develop best as a result of learning to overcome difficulties with the help of all their experience and knowledge, and all the skill, effort and attention of which they are capable.

Nor does it mean that so long as we have to teach over-loaded syllabuses to over-large classes we shall be able to get through all our work without some use of the old methods of reward and punishment and competition.

We shall however remember that those methods belong to the world that is passing, the world ruled by the fear of hunger and the fear of those in authority.

We shall remember that work is done best, and is the best preparation for a life of freedom and responsibility, when it is done for its own sake ; in fact, when it is done for love, or in Christian terms, for the love of God and our neighbour.

Love is the key to the new relations between teacher, child and subject. To love is to know. The teacher must learn to love teaching, to love the subject, and above all to love the child ; and the child must learn to love learning, to love the subject and to love the teacher.

A. S. Neill, in *The Problem Teacher*, says, 'A good teacher does not draw out ; he gives out, and what he gives out is love. And by love I mean approval, or if you like, friendliness, good nature. The good

teacher not only understands the child ; he approves of the child.'

In the past we have had to teach children chiefly in large classes. Teachers have often had little time, and seen little reason, to pay special attention to the needs of John or the interests of Mary. John and Mary often meant little more than two strokes on the register, two exercise books to be marked.

In a true democracy, where all men and women share the responsibility and the work of government, the proper education, and the fullest possible development of every man and woman are clearly of the greatest importance to all.

We shall therefore have to know each child we teach far better than we have done in the past, in order that we may make far more allowance for the fact that children are like their noses : all alike, but at the same time all different.

We taught by classes partly because we were training children to enter certain classes, primary pupils to become wage-labourers, secondary pupils to become salary earners, university students to enter the learned professions, girls to become married women.

To-day our aim is no longer to train our pupils to enter any particular class, but to give each pupil opportunities for the fullest possible development as a human being and a responsible member of society. Individual and group methods of teaching are therefore becoming more important than class-teaching.

FROM OBEDIENCE TO RESPONSIBILITY

Most teachers and parents in the past have thought it of first importance that children should learn to obey.

This was because people saw that, for most children, to obey was likely to be their chief duty for the rest of

their lives ; while, for a few children, to obey was the first step in learning to command the obedience of others.

The division of the world into the few who command and the many who obey is however breaking down, and so in our schools obedience and discipline are of value only in so far as they help us to do what we have to do.

A democratic world will need not citizens trained to obey but citizens who have learned self-discipline, self-activity, and co-operation.

We must therefore encourage and help our pupils to learn and act for themselves, to govern themselves, to work together in groups and to help one another.

The motto of the past was ' Be good, sweet child, and let who will, be clever,' but democracy needs citizens who are clever as well as good, who not only want to do right, but have the knowledge and the ability to think for themselves, which they need to help them to decide what is right.

This means we must pay special attention to such subjects as civics, health, and religion, which will help children to become both willing and able to do their duty as responsible members of society.

It means also that learning to think becomes one of the most important of all school activities.

In the past child nature was thought to be wild, wilful and wicked, and the first duty of parents and teachers was therefore to break and tame the child's spirit.

We now see that children are neither ' good ' nor ' bad', but inexperienced. They may, as a result of their experience and of the way we treat them, become either good or bad.

Our aims must be to provide them with the

experience which they need in order to learn to be 'good', and to direct their activity towards useful ends.

Above all we must learn that as parents and teachers our most important duty is to enable our children to get on without us.

Democracy needs citizens with the courage to say and to do what their own knowledge and experience tell them is right, but has no use for citizens who can say and do only what their teachers, or their family elders, approve of.

Children will only develop this courage if they have the feeling that their parents and teachers respect them, trust them, and believe in them. We are passing from the Old Testament attitude of 'spare the rod and spoil the child' to the attitude taught in the Gospels, in accordance with which we must be willing to learn from our children as much as we teach them.

LEISURE

In the past children learned in schools little about how to spend their spare time, perhaps because most of them were unlikely ever to have spare time for much more than rest or sleep.

As the hours of work needed to produce our food and other necessities of life grow fewer, there is going to be more and more leisure for all.

Already one man in America, with the help of machines driven by power from coal, oil, or running water, can produce in one hour as much food or other goods as one man in Africa, who has at present little or no power or machinery to help him, can produce in about three days of hard work.

How are we going to spend our new leisure? The way likely to prove most satisfying is the enjoyment of creative activity.

We may distinguish three kinds of creative activity. There are the fine arts, such as music and dancing, painting, carving and literature.

Then there are the useful arts, such as building, weaving, pottery, wood-work and metal-work, farming and gardening.

There are also the social arts, from the management of a home to the government of a country and the direction of world affairs. Among the social arts we must include good manners, a knowledge of what to wear, what to do, what to say, how to eat and drink, in the presence of our fellow men and women at social functions.

We learn to enjoy a creative activity first of all by taking part in it. If therefore there is to be leisure for all, then all children must have opportunities to practise, in some form or other, all man's more important arts.

They must learn also to enjoy the creative activities of others, to listen to music, to look at pictures, to read books, with pleasure and understanding.

The arts themselves, like the schools, change as the world changes. New materials, new ways of making things, new forms of art, new fashions or patterns of social behaviour are coming into our lives. Our pupils need help in learning to make the best use of these new things and to enjoy the pleasures they can bring us.

In the past the schools, and especially the secondary schools, have been concerned with little but book-learning.

In the future the teaching of the fine, the useful and the social arts must take as important a place in the curriculum as language, history, mathematics and science have taken in the past.

The teaching of these new subjects will greatly affect our handling of the old.

For example, we must consider language as a form of social behaviour : we must learn not only to express ourselves in Swahili, Ibo or English, but to express ourselves gracefully and politely.

We shall learn much of our arithmetic and geometry on the farm or in the carpentry shop, and act plays to bring alive the past in history.

The cinema and the gramophone, wireless and television are not only new forms of art and new means of enjoying music and drama : they are coming to be used as means of learning the ordinary school subjects, and they are also practical applications of what we learn in science.

We can see, then, that changes in the world outside the school are turning upside down the world inside the school, the nature and methods of teaching.

Many of our ' new ' principles are in fact hundreds and in some cases thousands of years old, but to-day changes in the world about us are enabling us to put them into general practice for the first time in history.

All these changes make teaching a difficult profession, but they can also make it a very interesting and exciting profession. There is always something new to learn both from our own experience and from that of others.

Teachers who think they know how to teach are dead and done with. The only teachers who are any good to themselves, to their pupils or to society are those who are always learning.

Part II : Principles of Teaching Method

II : General Principles of Method

We must now consider some important principles which should underlie our teaching methods. These are the principles of activity, connecting with experience, interest, knowing our exact aim, selection, division, and revision.

ACTIVITY

Activity of mind and body is the chief characteristic of the life of the child, and so the first aim of all methods of teaching must be to encourage and to direct the activity of the pupils.

Children learn by doing. Knowledge only becomes theirs as they use it and so make it a part of their experience of living.

This does not mean that our pupils must be active in every lesson, but it does mean that everything we teach should result, sooner or later, in some kind of activity.

CONNECTING WITH EXPERIENCE

Life is a continuous experience. Everything we do is connected with all that has gone before in our lives, and with all that comes afterwards.

When children come to school they have already been active in mind and body for several years. It is wrong, therefore, for us to behave as though we had before us so many empty boxes ready to be filled with knowledge. Those little boxes come to us with a

great deal in them, and if we wish to add more we must see that it fits in with what is already there.

We must connect the new with the old, and then the new will take its place in that ever-flowing stream of activity which is the life of the child. The starting point of every lesson must be something the children have already experienced.

The driving forces behind all activity are our instinctive needs. Enjoyment has come from activities which in some degree satisfy those needs, and so children have unconsciously chosen those activities which gave the greatest instinctive satisfaction.

When, therefore, we connect our teaching with the children's past activities we are connecting it with their instinctive needs. If we connect it only with what the children have been told, and not with what they have felt and done, the connexion will be of little interest to them, and of little teaching value.

For example, if children only know the sea from what they have been told about it, that knowledge is of little value as a starting place for a lesson on, say, deep sea fishing.

But if they have seen the sea, have been in it and on it, then to connect our lesson on fishing with their experience of the sea will help the children to form from our description a clear and correct picture.

AWAKENING INTEREST

If we connect what we teach with the experience of our pupils we shall do much towards carrying out the third principle of method, which is that we should awaken interest.

Children are interested in what provides outlets for their instinctive urges. They are interested in finding out things, because we are all instinctively

curious. They are interested in competing against one another, and in trying to beat their own records, because we are all at times urged by our instincts to fight, to get the better of people and things. For the same reasons they are interested in overcoming difficulties and in solving problems.

By connecting the new knowledge and skills we teach with the child's own activities, we awaken interest ; and if we follow the principle of activity, and see that the children make use of what they learn in doing something they enjoy doing, the interest will grow as the work goes on.

This does not mean that children will be interested in all their work for its own sake. Every subject has its 'grammar', that is to say its simple basis which has to be mastered and memorized but is not in itself able to excite much interest.

The less exciting jobs, such as memorizing the multiplication tables or learning to spell, will be carried through cheerfully if they are treated as steps towards carrying out some larger purpose in which the children are interested.

For example, children will quickly and willingly learn to spell the words they need in order to write a letter they want to write.

KNOWING OUR EXACT AIM

Both teacher and pupils should be clear about the aim of every lesson. It may seem unnecessary to say this ; but too often in practice we see teachers taking lessons without any clearly-thought-out end in view, while their pupils have no idea at all of what the lesson is aiming at.

Our teaching will be clearer and more straightforward and therefore more interesting and effective,

if our first step in planning every lesson is to decide what we hope to effect by means of the lesson.

We need to know the aim of every lesson because every part of it, and everything we and our pupils do in it, should depend upon that aim.

If our aim is to help the children enjoy a poem, we shall not do the lesson in the same way as when our aim is to teach them how to read the poem aloud.

The children also must know the aim of every lesson. To know just what we are trying to do, and why, is a great help in doing it, and adds much to our interest in our work. Children feel about this as we do. They like to know where they are going.

We must have an exact and limited aim in each lesson. Some teachers are content with statements of aim which are far too general, for example ' to teach multiplication ' when in fact the aim is to teach the children the first half of the six-times table.

SELECTION

When we know our exact aim our next job is to select material suitable for carrying it out.

In one lesson, or even in a course of lessons, we cannot teach our pupils all there is to be known about, for example, Aggrey of Achimota.

We must first be clear about why we want our pupils to know more about Aggrey. We have to consider the particular pupils we have to teach, and the number of minutes or periods we are given in which to teach it. With these points clear in our minds we shall be able to select which of all our facts and opinions about Aggrey we shall use in our teaching.

Our success will depend very much upon our skill in selecting material suitable for our pupils and for carrying out the aims we have in view.

DIVISION

After selection comes division. Whatever our subject, it must be properly divided into steps or stages.

We must go forward not at one rush from start to finish of our lesson or course of lessons, but by separate stages, and we must have each stage clearly divided from, but at the same time properly connected with, the next, both in our minds and in our lesson note-books.

If we do not divide and connect our material in this way, our presentation will be confused, and our pupils will be confused by it.

Not only must the material be divided into stages. These stages must themselves be arranged in the best order, so that the whole has a beginning a middle and an end, a shape and a plan, with each part in the place where it is most useful.

For example, in dividing up the material we have selected about Dr. Aggrey, we may find it best to use a time basis, and to begin with his birth, go on to his childhood, early education, and so on.

We may on the other hand find it better to consider his importance first as a teacher, then as Vice-Principal of Achimota, as an influence in Gold Coast affairs, as a leader in West Africa, as an African and finally as a citizen of the world.

There are always many possible ways of dividing up our material. The right way is that which is best suited to our purpose and our pupils, to the material itself and the means we have of presenting it.

REVISION AND PRACTICE

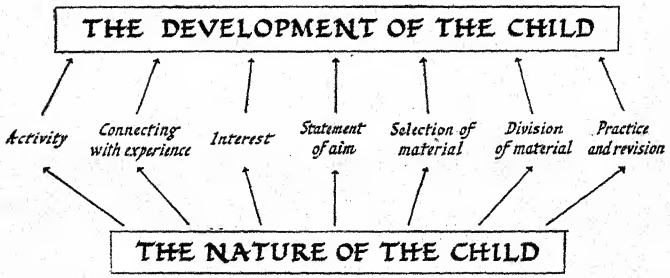
We may often find it helpful to sum up each stage of a lesson before we go on to the next, and in any case we should allow time for a summary or revision at the end of our lesson or course of lessons.

If we are teaching some skill, then practice forms the greater part of the lesson.

If we are presenting new knowledge, then revision is necessary either at the end of each stage, or at the end of the lesson, or both.

When we are teaching children we have to go over our material several times. Practice and revision are always necessary. Teachers are too often tempted to believe that when they have ' done ' a subject or part of a subject, they have ' done with ' it, and there is no need for any further attention to it.

Without plenty of practice and thorough revision, children do not master what they are learning well enough to make practical use of it ; and unless they reach the stage of making use of what they have learned, they soon forget it. Much otherwise good teaching is wholly wasted for lack of proper attention to practice and revision.



III : The Exposition of Knowledge

This chapter deals with the application of our general principles to exposition, that is to say to the kind of lesson in which we present new knowledge. This is best done in five steps, preparation (or connecting with experience), statement of aim, presentation, generalization, and application.

PREPARATION

This step is chiefly a matter of connecting what we have to teach with the experience of the children, and begins with finding out what they already know of the subject we are going to deal with.

The questions we ask in order to find out what our pupils know will stimulate their interest and help them to see where they are and where in general they are going. Their answers will help us to see what we have to teach and how to teach it.

Our questions should aim at stimulating the activity and the co-operation of our pupils, at making them see that we need their help, that learning is something they are going to do and not merely something we are going to do to them.

One of the difficulties of class teaching is that the children have not all had the same experience, and the best we can do is to strike an average of the experience of our pupils.

Children, like the rest of us, are interested first of all in themselves. They are interested in new things

only when they can connect them with things already familiar, things which have become part of their experience and so part of themselves. The more we can bring our pupils' own desires and interests to bear upon the subject we are teaching, the more successful our lesson will be.

For example, if the children happen to be running a school shop, it will be easy to show them the need for some new knowledge in arithmetic and simple accounts.

If the children want to put on a play, we shall have our opportunity of interesting them in speech training, in methods of learning by heart, and in the carpentry, drawing and painting they need to prepare their stage and scenery.

In doing what they want to do the children are likely to meet many difficulties, and they will be greatly interested in any help which we offer towards solving them.

Some subjects lend themselves better than others to this step of connecting what the teacher wants to teach with what the children have done and what they want to do ; but there must always be some sort of preparation to help the teacher to know where to begin and how best to gain the pupil's interest.

A word of warning may be needed here. A lengthy preparation is not necessary at the beginning of every lesson. When one lesson follows naturally from the last lesson on the same subject, a question or two may be all we shall need.

We should always get on to the new material as soon as we can. We want to awaken the children's interest in our subject by connecting it with something in which they are already interested ; but we do not want to tire them by trying to connect everything we say with something that has gone before. We must

avoid the danger of killing their interest by spending too much time trying to awaken it.

The better we know our class, the shorter the time we shall have to spend upon preparation. When the class is new to us, we shall need more time, even if we have the help and advice of the teacher before us. For a sure and sharp start we must know our pupils.

Good teachers are able to get into the minds of their pupils and see the world through their pupils' eyes. The ability to find out the children's knowledge and interests, and to make use of these in leading them to new knowledge and new interests, distinguishes the teacher from the mere ' crammer '.

STATEMENT OF AIM

The pupils, as well as the teacher, should know the aim of every lesson.

If the preparation is well done it should give the class some idea of what the aim of the lesson is ; but in any case the aim should be clearly stated so that the pupils know exactly what they are trying to do.

Children like things to follow a clear and simple plan, and they lose interest if they cannot see what the teacher is trying to do. When they start work they like to know what they are going to do and why they are going to do it. Even small children can follow orderly steps towards an aim that has been set before them.

The way we state our aim will not be the same in all lessons. In a set of lessons based on a Reader, the children, after one or two lessons, will know the general aim as well as the teacher does. There may be one secondary aim or more in each lesson, and these should be clearly stated. In an arithmetic lesson the aim may be no more than to give practice in a rule already

learnt. But however simple the aim may be, we must make quite sure that all our pupils are clear about it before they start work.

In some lessons we cannot tell the children at the beginning of the lesson exactly where they should expect to be at the end. We can, and should, tell them the direction in which to set out ; but we cannot tell them in full where they are likely to get to.

For example, when we use the heuristic method, the aim of the lesson is for the children to learn by finding out for themselves something they do not know. In an appreciation lesson, the aim is to give the children a chance to form opinions, and experience emotions, in connexion with the material we present to them. In scientific experiments again the aim is often for the children to find out, by means of an experiment, something they do not know.

It is clear that such lessons will lose their point and interest if we tell the children beforehand what the result of the lesson is likely to be. We have to start them off on the right road and then leave them to find their own way.

PRESENTATION

Once the children are properly prepared, and clear about their aim, it is time to present the new knowledge for which we have prepared them.

The term ' presentation ' is not wholly satisfactory because it suggests that the children sit still while the teacher gives them something, whereas in fact the children must take an active part in mastering the new knowledge.

Good presentation depends much upon the careful selection and division of material. Even in telling a story we must know what to put in and what to leave

out, and we must have the story in our minds clearly divided into its proper parts, and the parts arranged in the best order and properly connected and related.

GENERALIZATION

When we learn something new, we at once set about connecting and comparing our new knowledge with the knowledge we already possess.

Children see a horse for the first time. This is new knowledge. They already know dogs, goats and cows, so they will probably think the horse is a big dog or goat, or else some kind of cow.

By comparing new knowledge with old we form general ideas : for example, by comparing the horse, the dog, the goat and the cow we may form the general idea of a class of four-footed animals useful to mankind.

Our minds like to put things into classes and arrange our knowledge in an orderly way. Knowledge is of little practical use to us until we have put it into some system and order.

We begin the work of generalization when we are quite small children. We soon learn that there are things we do which please Mother, and other things which do not, and we use a generalization from these in deciding what to do. Children see that a ball, a stick, a stone, if thrown up into the air, come down again. They expect that anything they throw up will fall down. This expectation is a general rule discovered by the child, a generalization.

Children make their own generalizations, and act upon them, in their play. One class made the generalization, ' If we kick the ball too high, it goes out of the playground and gets lost.' So they made the rule, ' No kicking the ball up into the air.'

The aim of many lessons is to reach some

generalization, to put things into their proper class and find out some rule which applies to all the things in that class. Such lessons we shall learn to call 'inductive'. But throughout our teaching we should make use of every opportunity to help children to form generalizations and make use of them.

There is a great temptation, especially when we are faced with the difficulty of preparing children for an examination in which the questions have to be answered in a language which is not their mother tongue, to allow our pupils to depend too much upon their memories, and to teach them little more than the words in which to answer the questions they are likely to be asked. There is often too little time for the slower and more difficult work of helping the children to think, to get at the meaning of and to understand the use of what they learn.

Children are likely to make all sorts of mistakes in their thinking. They form opinions without stopping to think whether they have enough good reasons to support those opinions.

The following are examples of three common kinds of mistakes in thinking :—(i) Because their town has a river and a bridge children may think that every town has these things. (ii) When a 'big man' happens to die soon after an eclipse, they may believe the eclipse caused or foretold his death. (iii) Because rain helps the grass to grow, they may think that it will make their hair grow.

To cure children of such mistakes is not easy. It needs time and patience. The cure lies in the direction of making sure that they understand all we teach well enough to make use of it and that they connect it properly with their own experience and activities.

We may be tempted to get over the difficulty by

telling our children what to think, instead of helping them to learn to think for themselves. If we do fall into this temptation, our pupils and our country will suffer ; we shall send out from our schools young men and women able to think only what they are told to think, and to do only what they are told to do or what was done by their parents before them. They will believe all they want to believe in the books and papers they read, and in the speeches they hear, without being able to tell what is true and what is false. They will not develop their own powers of thought and action, and so they will be able to do little or nothing to help in the development of their country.

In order to save time we have to give children a certain number of ready-made generalizations ; but it is bad teaching and we should do it as seldom as possible.

For example, we can tell children that water boils at 100° Centigrade. This is quick and easy and may be all that is needed for examinations. But the children will be far more interested in this fact, will understand its meaning and remember it far better, if they find it out for themselves with the aid of a fire, a pot of water, and a suitable thermometer.

Our rule must be that as far as our time and other arrangements allow we must help our children to make their own generalizations, based upon their own observations and experiments.

APPLICATION

We have not mastered our knowledge until we have learnt to use it. What we learn we must test by putting it into practice.

When we put a generalization into use, we may find that it does not work. Water may boil at 100° C. by

Such things as a picture or a carving, or a specimen of pottery or weaving or wood-work, need a good background and proper lighting. We should try to present our material in surroundings which are suitable to the material and which give pleasure in themselves.

If our classrooms are dark, dirty and ill-planned, if our school buildings are ugly and the grounds are badly laid out and uncared for, we cannot expect our children to learn to enjoy looking at things. We find that people in the ugly dirty industrial towns of England are not very interested in pictures.

We must know our children well enough to know what is likely to please them. We must begin with what they *do* like, and then we can, if necessary, lead them by gentle stages towards what we think they *ought* to like.

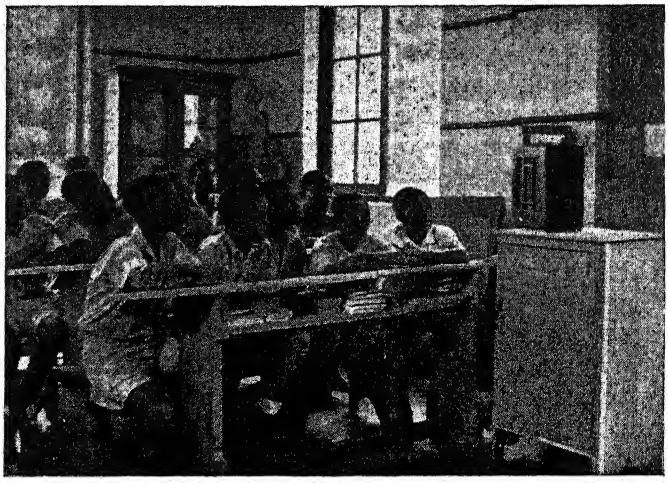
Dr. Samuel Johnson said that to begin with we should allow children to read whatever books they liked. The great thing is for them to develop a taste for reading. Give them time and they will come to better books later.

What the children like is always in some sense what they need. To help them to enjoy work which is good of its kind, we must help them to connect it with their experience and their activities, and so with their instinctive needs.

The best work is not always the easiest to understand at first sight. To prepare the children to enjoy it we have to spend time making clear the meaning of the work and the intentions of the artist or writer.

Good poetry for example always puts a great deal of meaning into very few words, and if children are to enjoy a poem we must make sure that they understand at least its general meaning and intention.

We must take care to keep all our explanations



A class in music appreciation, by use of the radio. The pupils are at ease, and do not have their attention drawn away by outside disturbances.

quite apart from the actual reading of a poem or story. If the reading is interrupted by explanations, the children's pleasure in it will be spoilt.

PRESENTATION

Our presentation of our material must itself be as perfect a work of art as we can make it.

Reading aloud should bring out the full meaning and value of a poem or story. It should not only tell the children what the writer is trying to tell them ; it should also make them feel what the writer is trying to make them feel.

Whether we do the reading ourselves, or whether we get one of the pupils to do it for us, it should be carefully prepared in advance, so that whoever does it is able to make a proper job of it.

As we have said, there should be no breaks in the presentation : we should put the work before

Some English school-children look at an exhibition of children's drawings in London. The exhibition is held every year. After a class has been to see the drawings, their teacher will discuss their opinions with them.

the pupils as a single and complete whole, or as a clearly divided part of a larger whole. The presentation should be complete in itself.

DISCUSSION

After the children have had an opportunity to enjoy the work we are presenting to them, they should have an opportunity to discuss it, to put into words their thoughts and feelings about it, and to ask questions about any points connected with the meaning of the work or the aims of the artist or writer that are still not clear to them.

Once the children have had an opportunity to form and express their opinions and feelings we may help them by explaining what we ourselves feel about the work we have presented. If we tell them too much

about our own feelings and opinions before they have expressed their own, there is a danger they may be content to try and copy our reactions and never learn to depend upon their own reactions and their own judgement.

This discussion of the work prepares the children to study the work again, for themselves, or to enjoy other works of the same kind, or to enjoy a second presentation of the same work another day. Discussion is in fact a second preparation.

One of the signs of a great work is that the more we study it the better we enjoy it, and it is a sign that we have prepared and presented a work well if the children ask for it to be repeated.

We do not want to tire them by taking them too often over the same ground, but a really thorough appreciation of one work is far more educative than an incomplete appreciation of several.

The growth of appreciation in children is the growth of a tender plant which must be gently handled.

If children have really enjoyed something, they may be unwilling or unable to put into words what they feel about it. Silence may sometimes be a sign of enjoyment and on such occasions we should let well alone and not try and force children into a discussion.

The greatest danger is that our lessons in appreciation may become lessons in insincerity. We must by all means avoid anything which may lead our pupils to say what they think we expect, instead of what they actually think and feel, about what we have presented.

We must make it clear that in all appreciation lessons our pupils need never be too ashamed, or too polite, to say what they really feel ; that unless they help us by telling us the truth, we cannot help them. African children are particularly sensitive to other

people's feelings, and we must make sure they understand that, if they do not like the work we have presented, we really do want them to say so.

If we have reason to believe that the children have not in fact enjoyed our material, it is better to leave out the discussion altogether. If they have not enjoyed it, they have got nothing from it. We have failed, and we can only try to find out why, so that we can do better next time.

Older pupils, once they have come to enjoy a work presented to them, may be encouraged to discuss the skill and the methods of the artist or writer, how he (or she) gets the effects he desires, whether the work is well put together, and other points of this kind which go to make up what we call his technique.

PRACTICE

In learning appreciation, as in all other kinds of learning, we learn by doing. To practise an art is the best way to learn to understand and to enjoy good work done in that art.

Children of primary school age usually have more, and not less, artistic ability than older children or grown-up people. They should have opportunities to paint pictures, to carve and model, to make up poems and stories and tunes, to sing and to play instruments, to write and act plays, and so on. However rough their efforts may be they will have very considerable educative value and will greatly help the children in learning to appreciate the work of others.

It is clear that there will not be time for practice as a stage in a single appreciation lesson ; but lessons devoted to practice must form part of every course of lessons in appreciation.

V : Practice and Revision in Teaching Skills

The lesson in which the children are learning some skill such as reading, handwriting, or wood-carving, calls for stages rather different from those used in exposition. These stages are usually preparation, statement of aim, practice and correction.

PREPARATION

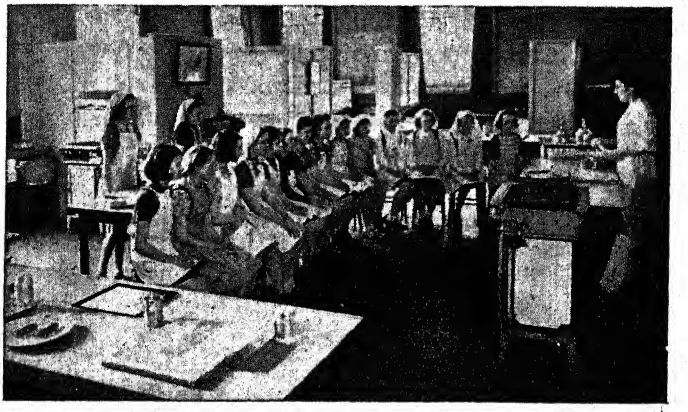
This step will have the same aim when we are teaching a skill as it does when we are making an exposition ; but the particular kind of past experience most useful in learning a skill is experience in doing something which calls for skill of the same kind as that which forms the subject of the lesson.

For example, in mass literacy work in Eastern Nigeria it has been found that women who are good at body-painting learn handwriting more easily when these two activities are connected.

Children in East Africa who have experience in herding cattle quickly become skilful in simple number work if this is connected with the counting of cows and sheep.

Another important experience for learning a new skill is experience gained in recent lessons on the same subject or one like it.

For example, in a school where the younger children learn print-script writing and the older children pass on to cursive, the first lessons in joining letters should be connected with the last lessons in writing print-script.



Housewives in the making.—The teacher of a cookery class has reached the presentation stage in her lesson. This is an English school, and the gas stove, much used in England, can be seen in the right foreground.

STATEMENT OF AIM

As in exposition we must make our aim clear. The children will work better if they begin work knowing exactly what they are going to do, and why they are going to do it.

PRESENTATION

The children observe, look and listen, while the teacher does and explains what the children are to do. In a writing lesson the teacher may for example write some words for the children to see how it is done, and at the same time explain how to hold the pen, how to make the strokes, and so on. There are often several ' do's ' and ' dont's ' which the children must be told before they start.

PRACTICE AND CORRECTION

In order to master the skill presented to them, the

children perform, a number of times over, the action the teacher has performed and explained. After the teacher has been watching the children at work and has seen the results, it may be necessary to show them once more the right way to perform the action. Mistakes and badly controlled movements are pointed out, and their causes explained.

Correction is followed by further practice. When the children no longer make improvement they are tired, and further practice in that lesson is a waste of time.

Practising a skill.—In this metal-work class the teacher is correcting the movements of one of his pupils. At the practice and correction stages of the lesson the teacher can give attention to each pupil in turn.

It is important to remember that in all but the very simplest skills, practice alone does not make perfect. In order to improve a skill, we must give as much time and thought to correction as we give time and effort to practice.

There are two other points in connexion with teaching a skill which we need to remember.

First, we must be careful to see that the skill we ask our pupils to learn is not too difficult for them to master at the stage of development they have reached.

For example, a great deal of children's time is wasted when a teacher tries to make them write with pen and ink before they have mastered the handling of a pencil, or tries to make them write on, or even between, ruled lines before thay can form their letters with ease and certainty. The illustration on page 39 came from a school where this point was well understood.

Secondly, with reasonable effort a child should be able to reach a reasonable degree of success within a reasonable time : the younger the child, the shorter the time. Children like to see some result for their efforts, and they like to see that they are making progress. If the work is too difficult, and they see no results, they soon lose interest.

The satisfaction that comes from success is necessary to successful learning. Whenever we can we should plan our work, and arrange our time-tables, so that in lessons in skill the children are able to finish a job, or a clearly divided part of a job, in each lesson.

Small children, for example, when they start making a picture, like to finish it before the lesson ends and they have to stop work. They lose interest in a picture if they are interrupted in the middle of making it.

Our last general principle was the principle of revision. Revision is useful at any or all of the following stages :—

at the end of each part of a lesson ;

at the end of a lesson ;

from time to time during a course of lessons ;

at the end of a course of lessons. In planning a course of lessons we should always allow time for revision.

Three of the most important aims of revision are :

1. To enable the teacher to make sure the children have mastered their knowledge well enough to be able to use it.

2. To sum up what has been done, and bring to the attention of the children its main points. This is an aid to memory. It helps us to put the knowledge we have gained into good order, so that it makes a firm base for our next advance.

The more memory-work a subject needs, the more frequently this kind of revision should be done.

3. To enable the pupils to see what they have done as a whole, and so to understand how each part of it fits into that whole. Revision helps the pupils to arrange their knowledge logically.

For example, we may by means of a course of lessons build up a picture of Dr. Aggrey. At the end of this course, revision will give us an opportunity to give the pupils a clearer idea of the general principles behind his private life and public acts, and of his effect upon the course of history, than they could get while the course was still in progress.

Revision gives the pupils a chance to see what were the really important points in what they have been learning. They have been among the trees : revision

gives them a chance to view the wood as a whole.

There are various methods of revision, but the most common are to ask the pupils questions about what they have learnt, and to re-present in the form of a summary what we have been teaching.

The more of this work of summarizing the children can do for themselves the better. It is not easy, and in the lower classes the teacher will have to do most of it. As the children go up through the school they should learn to do more and more of it for themselves.

They should learn to summarize not only in note form, but in the form of maps and plans, charts and diagrams. This sort of work is valuable not only as revision, but also as a means of teaching children to think for themselves, to make a logical arrangement of their knowledge, and to study without the help of a teacher.

THE SPIRIT AND THE LETTER

T. Raymont (*Principles of Education*) summing up what we have been saying in Chapters III and IV and in this chapter about the importance of the different stages into which the different kinds of lessons may be divided, makes the following points :—

(1) It is the spirit of these steps and stages that matters. We must never be content blindly to follow the letter.

(2) This means, for example, that it is not necessary to go through all the steps laid down in books on school method in every lesson we teach. But it means also that we must keep the steps we do go through in the right order, because their usefulness depends upon this.

(3) There are certain rules that do not change. New knowledge must always be built upon the knowledge and experience the pupils have already gained.

We must have experience of particular objects or events, of concrete examples, before we can make a generalization. We must understand what we have been told before we can use it, and we must make practical use of our knowledge in order to complete it and make it lasting. These truths are sure because they are based upon the psychology of the child.

(4) Teaching is an art. Like all arts, it has certain basic principles, but there are many different ways of putting these principles into practice. Once we have seen the need for them and mastered the spirit of them, there is no need to follow them word for word. We may even forget about 'preparation', 'presentation', and so on. These steps, however, are the basis of all good teaching. Even when we do not follow them consciously, or write them bold and clear in our lesson notebooks, the spirit of them, the truths about the minds of children on which they are based, must be embodied in all our teaching.

Exposition	Skills	Appreciation	Revision
1 Preparation	1 Preparation	1 Preparation	1 Preparation
2 Statement of Aim	2 Statement of Aim	2 Statement of Aim	2 Statement of Aim
3 Presentation	3 Presentation	3 Presentation	3 Presentation
4 Generalization	4 Practice	4 Discussion	
5 Application	5 Correction	5 Practice, and re-presentation or presentation of similar or connected material in further lessons	Questions, summaries (verbal and visual), practice etc. according to the aim of lesson
	6 Repetition of steps 4 & 5		

SUMMARY OF LESSON STEPS

VI : Five Popular Maxims

PROCEED FROM THE KNOWN TO THE UNKNOWN

This is another way of saying that we should connect new knowledge with the experience of our pupils.

One example of the 'known' is the lesson, or the part of a lesson, we have just completed, from which we proceed to the 'unknown', in this case the material of the next lesson or the next part of the lesson.

In accordance with this maxim, modern curricula and examination syllabuses in such subjects as geography and civics often give an important place to the first-hand study of the home region.

A maximum recorded temperature of 100° F., an annual rainfall of 50 inches, an infant mortality of 100 in the thousand, a population of 50,000, a tax of five shillings in the pound and other such figures will mean little to the children until they know, preferably from their own observations and records, the corresponding figures for their own town or village.

The more we know about our own home region, the more we can learn about the rest of the world. Each thing known from first-hand experience makes a starting point for the study of something unknown.

PROCEED FROM THE CONCRETE TO THE ABSTRACT

This reminds us that babies learn first from the things they taste and touch and smell, and later from things they see and hear.

Small children are interested in people and things,

not in abstract ideas. They know *my dog* and *your dog*, but not *dogs in general.* They must learn by studying concrete examples before they proceed to draw out or abstract from these examples a general rule.

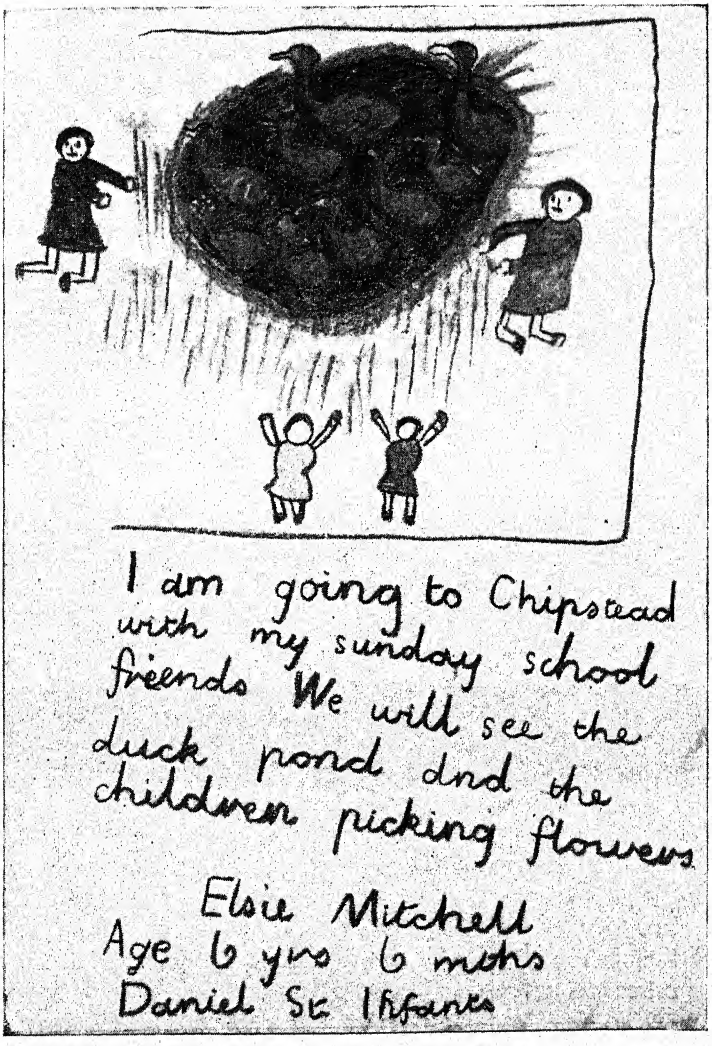
Notice the word ' proceed ', go forward. Children must not remain content with the concrete ; they must learn to go forward to the abstract. As soon as they can add two yams and three yams, it is time to learn also to add two and three.

This maxim is important because it states how our knowledge of the world has in fact advanced. Abstract means ' drawn from ' and all abstract ideas are drawn from some concrete base.

Our knowledge of the world began as a result of doing things we wanted to do by making use of things we found in the world about us. ' A straight line ' means a stretched string, and geometry began when men began to use string to help them measure farms and make plans of them. Chemistry began with the use of metal to make weapons and other tools. Astronomy began with the use of the stars to reckon the seasons and the times for planting crops.

All abstract nouns are connected in some way with concrete things. A mile is a *thousand* (Latin *mille*) paces of a Roman army on the march, an acre a *field* (Latin *ager*) that a man and an ox can plough in a day. ' Encouragement' is putting *heart* (Latin *cor*) into people.

Mankind always learnt by starting from the concrete, and by returning to the concrete as a basis for further discovery. Children learn best in the same way. If our teaching is to be truly educative we must never get too far away from the living people and the real things known to the children.



Free composition by a little girl 6½ years old. No lines, and pencils rather than pens for young children. The original drawing was made in coloured chalk from Marion Richardson's Writing and Writing Patterns.

PROCEED FROM THE PARTICULAR TO THE GENERAL

This is only another way of saying, ' Proceed from the concrete to the abstract.' The particular example is concrete, the generalization is an abstraction, something ' drawn from ' concrete examples.

This is the inductive method of teaching.

PROCEED FROM THE EASY TO THE MORE DIFFICULT

Each step in our work must be neither so easy that the children feel it is hardly worth taking, nor so difficult that they are discouraged and lose interest.

It is however important to remember that what seems the easier thing to us may not seem so to the child.

We might, for example, think that children would easily remember several words if the words were alike, such as *mat*, *rat*, *cat*, *bat*. In fact, experiment shows that they remember the words in such a list better if the words are quite different one from another.

It would seem easy and reasonable to start learning to read by first learning the letters, then learning to put the letters together into words, and last of all putting the words together into sentences. But again, experiment has shown that children learn to read more quickly and easily if they begin with sentences.

We have to consider the children's interests. Small children have no use for, or interest in, simple lines, but they are easily interested in animals. It may seem easier to us to start by learning to draw simple lines, but to children that seems a dull and difficult job. It seems far easier to them to draw a cow or a dog or some other animal which interests them.

To find out what is easy for the child we must depend not upon logic but on psychology. If we have learned to think logically, the child has not ; so we

must forget our logic and depend instead upon our knowledge of the nature and interests of our pupils.

PROCEED FROM THE SIMPLE TO THE COMPLEX

Again, we must remember that 'simple' must mean 'simple from the point of view of the child'.

Children are interested in whole concrete objects, a mother, brother, a policeman, a house, a dress, a motor. They do not break these down into parts, qualities, uses, and so on.

People and things become more complex as we learn more about them. As we grow older we learn that 'Mother' was once a girl. She is now a woman, and a married woman. She has a name, she is so many years old, she was born in such and such a place of such and such a family. She is no longer one great single simple fact, 'Mother'.

A sentence, for children, is a simple ordinary thing they use all day long. Single words, except those that have the force of a sentence, like 'Hush!' are things they do not notice that they use, and letters hardly exist at all for them.

This maxim, like the one before it, is misleading, because what seems simple to us is often by no means simple to a child, and what is complex to us often seems simple from a child's point of view.

As a result these two maxims have caused some of the worst teaching the world has ever seen.

It was in accordance with these maxims that children were made to begin learning a foreign language by spending years memorizing its grammar, to begin reading by learning their A B C, or drawing by spending hours in practising simple lines.

★ ★ ★ ★ ★

These five maxims must be our servants and not our masters. They are no more than guides we may sometimes find helpful, especially in exposition. We should use them only when they help us to carry out such general principles of teaching method as we have considered in our second chapter.

In fact all our use of general principles and particular maxims of teaching method should be guided by one consideration : the nature of our pupils.

We must work *with* our pupils, according to *their* interests and ways of thinking, not according to our own. We have to try to understand how things look from the child's point of view, and fit our methods to that point of view.

If it seems easier to children to start by drawing a cow instead of by practising straight lines, and if they work better and learn more by starting in the way they like, then we must throw aside our own ideas about simple and complex, easy and difficult, ideas based upon reason, and instead base our methods on the nature and interests of our pupils.

The truths behind these five maxims can be summed up by repeating that in all our teaching we must consider the nature and the experience of our pupils, and that one of their powers which it is most necessary to develop is the power of making general rules based upon the consideration of concrete examples.

LOGIC AND PSYCHOLOGY

In considering these maxims we have spoken of logic and psychology.

In logic we study how to think, reason and argue in a clear and correct manner.

In psychology we study how people's minds work, what people actually feel, say and do.

Logic helps us to arrange our subject-matter in the clearest manner, to divide it into its proper parts, and to bring out the connexions and relations between those parts.

Psychology helps us to understand how our pupils behave and how they 'look at' things. It also helps us to understand our own behaviour.

Psychology considers what people think, logic considers the right way to do our thinking.

When we grown-up people arrange our material logically, we arrange it in the way best suited to our own minds, which are stored with more experience than those of our pupils, and which have more skill in the art of thinking.

When we have to deal with some complex thing, we see how it can be divided into parts. We see how these parts fit into one another. We see that the parts are simple things which make up a complex whole. So it seems natural to us, when we have to study the whole, to begin with the study of a single simple part.

It is easy to forget that even we, when we see some thing for the first time, see it as a whole, and that only later, when we know more about it, can we come to know its parts. This is, in fact, a long and difficult job.

Children begin with the experience of the whole thing, what it does and of what use or interest it is to them. They only begin to break things down into parts when they are shown how to do so, or when they are forced to do so by some special need or interest.

Logic has its proper place in the middle of our lessons, in our presentation, and often at the end, in our summary or revision. It does not help us in telling what to begin with or how to begin.

The knowledge we present must be clearly arranged and properly divided into steps, and each step must

follow logically from the one before it. A story must go forward in a clear and logical manner. But logic will not tell us what knowledge or what story will be interesting and useful to a child of a given age or at a given stage of development.

What we teach, and how we prepare our pupils to learn it, will depend upon psychology rather than upon logic.

INDUCTION AND DEDUCTION

Two of our maxims, 'Proceed from the concrete to the abstract' and 'Proceed from the particular to the general', are in fact no more than advice to make use of induction in our teaching.

The terms induction and deduction belong to the study of logic. They are logical methods of dealing with knowledge.

In the inductive type of lesson children observe a number of examples, and from these examples they form a rule. This is what we have called generalization; it is an exercise in inductive logic.

For example we may notice in our reading that a certain verb is followed by 'from'. We look for further examples of the use of this verb, and whenever we find it, it has 'from' after it. So we make a general rule and say that this verb is always followed by 'from'.

Children find that a piece of wood floats. They collect pieces of wood of all sorts and sizes, put them in water, and find that they all float. So they are able to form the rule, or generalization, that wood floats on water.

Children, whenever an opportunity occurs, should be encouraged to make experiments, to collect examples, and form for themselves generalizations based upon

their examples and experiments. This is an important part of teaching children to think. They are learning to think inductively.

When a generalization has been made we have to test it. This test is called deduction.

When children are asked to find examples of a rule, and to see whether the rule ' works ', they are working deductively.

'All men laugh. A is a man. Therefore A laughs' is an example of deductive reasoning. The generalization says that all men laugh. To test it, we have to consider as many men as we can, A and B and C and D, and see if, in fact, they laugh. If we find they do, then we may say that as far as we can discover the generalization is correct.

For example, if children continue putting pieces of wood into water they may at last come to some kind of wood like ebony, which sinks. Their generalization ' wood floats ' will no longer stand. It must be changed to something like ' most kinds of wood float '.

Deduction, in teaching, should follow induction. Children must first form rules from the study and collection of examples, and then test their rules by applying them to further examples.

The step we have called ' application ' is often, in fact, an application of deduction. We practise making use of the rule we have discovered, and by making use of it we also test it.

What we call ' descriptive ' grammar, on the other hand, is built up by the inductive method. We study what people say and write and when we have enough examples on some point we make a rule about it.

By means of induction and deduction we increase our knowledge. We learn both from the study of the material needed to collect examples, and from the

examples themselves. The generalization we form is an increase in our knowledge, it is something which we have gained and which we can use.

We learn also from deduction, from testing our generalization by the study of further examples. We found a piece of wood which would not float. We may find, from further reading, or from the teacher's correction of our spoken or written composition, that our verb is now and then used without ' from ' or with some other preposition. We have learned that there are exceptions to our rule, and if by further study and experiment we find more exceptions we may have to change our rule, to make a new generalization. All the time, we are adding to our knowledge.

We may use both induction and deduction in the same lesson. It is certain that if we use induction, we should also use deduction, either in the same lesson or later in the same course. In fact, both induction and deduction are going on all the time that we are adding to our knowledge. They are repeated one after the other, much as practice and correction are repeated one after another in learning a skill, and as presentation and discussion are repeated in learning appreciation.

VII : The Stimulation of Interest

One of the more interesting discoveries of modern times is that, under the same conditions in each case, our food does us more good when we enjoy it than when we do not.

The same has been found true of learning. Four hundred years ago Roger Ascham, father of the study of educational methods in England, taught that as an encouragement to children to learn, love is better than fear.

Experience and psychology both suggest that Ascham was right, and that children learn better when their teacher is also their friend, and when they work hard not for fear of punishment but because they are interested in their work.

The problem then is not to make children work, but to make them interested in their work.

ACTIVITY AND INSTINCT

What interests children ? Generally, all forms of activity. They like to be up and doing rather than sitting and listening. If they have plenty of suitable activity for their bodies and their minds, they will be interested.

What activities are suitable ? Generally, activities which give them outlets for expressing their instinctive urges. When the purpose they have in view is one which provides an outlet for the expression of an instinctive desire they will cheerfully undertake much

hard work, even work which in itself is of little interest.

They will work hard, for example, at trying to find out something they want to know. Curiosity has behind it the instinctive need to find food and mate.

They will work hard in competition with one another, or against their own records. The instinctive need to be ready to fight for mate or for food is behind our interest in all forms of competition.

They are interested in their work if it is likely to win praise. The praise, and the feeling of importance and well-being that result from it, satisfy their instinctive need for the society and for the approval of others.

We encourage children to paint pictures, make up stories, verses and tunes, run magazines, act plays, lay out farms and gardens, and we find that many of them take great interest in such activities, because they satisfy the creative urge which is one expression of the desire for mating.

The best teaching methods are those which give the best opportunities for satisfactory activity. The 'play-way', the 'project' system and the 'Dalton plan', the 'heuristic' methods of teaching, generally depend for their success on the fact that they give children plenty of opportunity for activity of mind and body.

We cannot of course leave children to act only as their natural urges direct them. The same urge may cause us to kill mosquitoes and to kill men. We have to direct children's natural urges into useful channels.

THE TEACHER'S INTEREST

The more interested we are in our pupils and their work, the better they will work. Our interest awakens theirs. How can we keep up our interest, teaching the

same thing year after year? There are two answers.

First, although the work may be the same, the pupils are not. If we are interested in our pupils no two years are alike for us.

Secondly, 'There are nine and ninety ways
Of constructing tribal lays
And every blooming one of them is right.'

There is no need to teach in the same way every year. We can interest ourselves in experiments in method and make it our aim to find, every year, new and better ways of dealing with our subject-matter. We can do much to keep up our own interest in the work, and our pupils', by learning and using new methods. Children, as well as teachers, get tired of doing things always in the same way. Even the driest work can be done in an interesting way if we use it as material for an experiment in how to learn.

A GOOD BEGINNING

The opening of our lesson should catch the children's attention. One way to ensure this is to open with something unexpected, or with a problem which the class is to solve with our help.

In a lesson about Aggrey, we might start with a picture of the shield of Achimota College, and ask why this has black and white keys of a piano upon it. In a lesson about types of highland we might start by asking why there are so many waterfalls and rapids in Africa.

The whole lesson turns upon a discussion of the problem. Before it is solved, the children will have been driven, by their interest in finding a solution, to finding out a number of facts, considering a number of opinions, and so both adding to their knowledge and exercising their powers of thought.

ARRANGEMENT OF MATERIAL

Especially with older pupils, interest will be kept up only if we arrange our material so that it develops naturally, each subject discussed developing out of the subject before it, and leading up to the one after.

Good arrangement of material makes learning a continuous exploration. It encourages the abler pupils to be always on the look-out for opportunities to connect and relate what they are learning with what they already know.

We can learn something about connecting our lessons from the editors of magazines which publish long stories a chapter at a time, in what are called serials. Each chapter ends at some specially interesting point, so that the reader is anxious to know what happens next, and so buys the next number of the magazine in order to go on reading the story and find out. We should aim at ending each lesson in such a way that the children are looking forward with interest to what they will do in the next.

DEGREES OF DIFFICULTY

The work we give our pupils to do must be properly adjusted to their knowledge and their powers, and to the stage of general development which they have reached.

There are two dangers here. If the work is too easy, the children have no feeling that they are ' getting on'. They do not get the satisfaction of overcoming difficulties, and so they lose interest. On the other hand if it is too difficult they will be discouraged. They will lose their faith in their own abilities, and they will lose interest. They like to be able to do their work well and to ' get it right'.

It is not good teaching to allow the children to make many mistakes. We should do all we can to encourage the habit of turning out good work, of doing things in the right way and getting the right results, and we shall not encourage this habit by making the work to difficult. This is particularly important in subjects such as spelling, language and arithmetic. Some books on language teaching call it the principle of 'the avoidance of error.'

The difficulty in class teaching is that work that is easy for the more advanced pupils may be too difficult for the more backward. To get over this we can either divide our class into several groups, according to the ability of the pupils, or we can use some such method as the 'Dalton plan' which enables the children to get on with their own work in their own time, each at his or her own rate of progress.

MARKS

Marks have their uses in stimulating interest, but the ordinary system of marking by results has serious disadvantages. The brighter pupils without much effort get enough marks to keep their places at or near the top of the class, the more backward pupils, in spite of all their efforts, remain at or near the bottom and often become very discouraged.

A better system is to give marks for effort rather than for results, so that a backward pupil who does his or her best will get more marks than a more able pupil who does not, although the quality of the actual work done by each of them is the same. One difficulty about this kind of marking is that it depends very much upon the teacher's judgement; it cannot be done unless the teacher knows the pupils really well. Nor will it work unless the children believe that the

teacher can and will judge their effort and abilities justly.

As marking for effort depends so much upon judgement the marks given usually distinguish only three degrees of effort :

a : the pupil has done his or her best
b : doubtful
c : the pupil has not done his or her best ;

with possibly ' a plus ' for outstanding effort, and ' c minus ' for extra-ordinary carelessness or laziness. When a pupil gets ' c minus ' or too many ' c's ' there is nearly always something wrong with the pupil, the teaching, the school, or the home, and we must find out what it is.

If we use this ' a b c ' type of marking for effort, we may often need, for our records, a certain amount of marking by results as well. Such marks are usually known only to the staff of the school, and are not seen by the pupils.

PRAISE AND BLAME

Praise is usually far more effective than prizes as a means of encouraging pupils to take an interest in their work ; but to use praise effectively we must know our pupils well enough to know whom to praise, when to praise, and how to praise.

We find that the best teachers praise often and blame seldom, because praise is more effective than blame as a means of stimulating children to do their best.

Children are always anxious to know what we think of their work, and if we merely give them marks without telling them our opinion they soon lose interest. Many children would rather hear an unfavourable opinion than no opinion at all, because even the

expression of an unfavourable opinion shows that we are taking some interest in them.

SELF-CONFIDENCE

It is important to make our pupils feel that we believe in them and in their ability to do the work we ask them to do, and to do it well. It has been said that the first duty of a teacher is to develop the pupils' trust in their own ability, to build up their self-confidence. 'I can' is always more likely to succeed than 'I will'. To tell children that they are stupid, backward or lazy is the best way to make them so.

When a pupil makes a mistake the first thing to do is not to blame the pupil, but to look for the cause of the mistake. In practice very few mistakes are due only to carelessness or laziness, and a mistake should be regarded as an opportunity for learning something about the pupil, the teaching, or the subject.

TIME LIMITS

Whenever possible pupils should be allowed only a limited time to finish a given job of work. This encourages them to give all their attention to their work, and to learn to work quickly. Here again we have the difficulty that what is too much time for our brighter pupils may be too little for the more backward, and we must always find some way of making allowances for this.

EXPECTING A HIGH STANDARD

We should also keep the standard of work we expect from each pupil, and from the class as whole, continually advancing, so that no pupils can get into the habit of taking their work too easily and doing less than their best. If children lose interest in their work,

they will not do it well ; but equally, if they do not do it well, they will lose interest in it.

FATIGUE AND ILL-HEALTH

Finally we must be on the watch for over-tiredness (fatigue) and ill-health as causes of loss of interest.

Lack of interest may be due to such causes as too much or too little bodily activity in games and manual work, bad feeding, housing or lighting, unsuitable clothing or uncomfortable desks and seats. It may also be caused by the rest periods being too few or too short. Many children who seem lazy and tired are really ill. Such diseases as dysentry, malaria, worms and avitaminosis often pass unnoticed by the pupil and the pupil's parents, and the teacher should always be on the watch for them, as well as for more dangerous diseases such as leprosy and tuberculosis. It is useful if one member of the school staff learns something about diseases and their symptons, as well as First Aid, so as to run the school dispensary.

Other children have far too much work to do for their parents out of school hours, or have so far to walk to and from school that they have little strength left for much beyond sitting-down jobs when they are at school. Some may come to school without having a proper meal before they set out.

The teacher cannot do much about some of these things ; but the general rule must be that we must find out all we can about pupils' health and the conditions under which they live and work, both at home and at school, and do all we can to have them made satisfactory. Children will not take much interest in their work unless their health is reasonably good and unless conditions in which they live and work are reasonably comfortable, convenient and healthy.

Part III : Methods of Teaching

VIII : Class Teaching

When we think of teaching we usually think of a class because our schools are usually taught in classes. So long as there are so many pupils to every teacher most of us will have to fit in with this arrangement, and most of our work will be to deal with a class.

Our methods therefore must in the main be those which can be used in dealing with a group of thirty, forty or even more than forty pupils. We must learn to make the most of the advantages of class teaching and to overcome as far as possible its difficulties.

ADVANTAGES OF CLASS TEACHING

Teaching children in groups saves time and effort. Many pupils have the same difficulties, which we can explain once for all to hear.

Class teaching uses the children's instinctive desire for society, for working and playing in groups. Most children, especially those who have not much faith in their own ability, work better when working with others than they do alone. It is easier to stimulate interest and activity in a group of children than in each one of a number of children working separately. If a few of the children become interested, their interest spreads through the class. The 'inspiration' lesson, given to a whole class, can be of very great value in stimulating interest and activity.

Class teaching helps children to learn to work together in a spirit of co-operation. A good teacher

can make the whole class work to make a lesson a success, to solve a problem, to finish a job of work, to carry out a project.

Here is possibly the greatest value of class teaching. A lesson where two or three clever children do all the work and all the talking while those who are more backward or less talkative are allowed to sit back and listen, is a thoroughly bad lesson. It fails to take advantage of one of the most useful opportunities offered by class teaching as a method, the opportunity to learn to co-operate.

Class teaching gives children the chance to see each other's work, and to learn to know good work when they see it. If two or three children in a class take a pride in turning out good work, for its own sake, the rest of the class is encouraged to do the same. It also gives opportunities for children to compete against each other, and a reasonable amount of competition is useful, especially to help us through uninteresting but necessary jobs such as learning to spell.

Class teaching gives us the best opportunities for teaching by suggestion, by means of what we are and how we behave rather than what we say.

It is usually easier to awaken emotion in a group of children than in a single child taken separately. Class teaching is therefore particularly suitable for lessons in such subjects as appreciation, morals, and religion, where the emotional reactions of the children play an important part.

DISADVANTAGES OF CLASS TEACHING

Every child is different, and however carefully we classify our children we are sure to find that in every class we teach the pupils differ considerably in ability, experience, and emotional development.

Every class has its 'top' and its 'bottom', its members who are good at one kind of subject and its members who are good at another. Yet we have to teach them all the same things at the same time in the same way.

One result is that few teachers are able to make enough allowance for the differences between their pupils in emotional development, and so the general development of the children suffers.

Another result is that most of the teaching has to be aimed roughly at the middle 60% of the class. The 20% more advanced pupils then find the work too easy while the 20% more backward pupils find it too difficult. If we give special attention either to the 'top' 20% or to the 'bottom' 20% the progress of the 80% suffers, and in classes of thirty or forty pupils this is a serious matter.

If instead of classes of thirty or forty or even more than forty we had social units of something between fifteen and twenty pupils, it would be possible to combine class teaching with special attention to groups or individuals. Unfortunately most countries have too few teachers, and spend too little money on education, to make such small classes generally practicable.

In class teaching pupils easily become inactive. Too many just sit and listen; some just sit. Such pupils are often clever enough to look interested when in fact they are thinking of anything and everything except the subject of the lesson.

It is by no means easy, in fact it is often impossible, to make sure that every member of a class of thirty or forty pupils takes an active part in the work throughout a lesson. There is a danger that we may think that because the class knows something, every member of the class knows it.

A child may be able to sing a song with the rest of the class, but not alone. Doing things with others is different from doing the same things by ourselves ; yet we know only those things we can do by ourselves.

For example, the class, as a whole, with the help of the teacher, solves a problem in arithmetic. Everyone seems to be taking part in the job and to understand how it is done ; but if we set each child separately to work another problem like to first, we shall soon see that we have been deceived.

In class teaching we must always be on our guard about getting false ideas of the children's progress in such a way. The truth is that we all have to do our own learning ; real learning is the result of individual effort. Others may help us to learn, and we may learn by working with others, but in the end we must each complete our learning by our own individual thinking and doing.

There is a temptation, when we have explained something, to say to the class, ' Is that clear ? ' and, if a number of pupils in the class say, ' Yes,' to pass on to our next point. If we question the class we usually find that some at least of the pupils who said, ' Yes,' were either deceiving the teacher on purpose, or unconsciously deceiving themselves, and did not understand our explanation at all.

If we are honest we shall admit that when we do this it is sometimes because we know in our hearts that all the children have not understood our explanation, but we do not want the trouble of going through it again.

CLASS TEACHING AND INDIVIDUAL METHODS

The Primary School (Board of Education, London), discussing the relative importance of class

teaching and individual methods, makes the following points :—

(1) In the nineteenth century in England, classes were so large that class teaching was the only possible way of getting through the work. Teachers became very skilful in handling large classes, and did much fine work, but the method gave them too little chance to pay attention to the special needs of each child, and the children had too little chance to play an active part in their own education.

(2) Children should be allowed to develop at the rate which suits them best. As the rate differs from child to child, this is impossible in class teaching.

(3) This difficulty has led to the use of those methods which allow children to learn by themselves at their own rates, especially in the case of children under five and over eleven years old.

(4) Since the aim of teaching is to make the child an active learner, such methods, which help to do this, are of value. But class teaching still has an important part to play in education and should not be altogether put aside in favour of new and untested methods.

(5) All the same, there are occasions when class teaching is not so suitable as methods which allow children to follow their own interests, study in their own way, and learn the priceless habit of working independently to carry out some purpose.

(6) This independent work must still, to a considerable extent, be guided and inspired by the teacher.

(7) The new individual methods are particularly suitable for small village schools where class teaching is often less useful and less necessary than it is in the larger schools in the towns.

IX : Practical Hints for Class Teaching

In her *First Book on Teaching* Miss Catty gives a useful list of points the class teacher does well to remember :—

1. Know exactly what you are going to teach.
2. Organize thoroughly.
3. Make the best use of the apparatus you can get.
4. Teach the whole class.
5. Try to be calm and natural.
6. Remember the test of class teaching is class working.
7. Make full use of the children's knowledge.

To these we might add :—

8. Make use of routine where routine is helpful.
9. Observe, and expect your pupils to observe, ordinary politeness.
10. Let the class co-operate in keeping order.

KNOW EXACTLY WHAT YOU ARE GOING TO TEACH

Class lessons need careful preparation. If we have a story we must know it well and be able to tell it in a lively manner.

If we are going to present new knowledge, we must be clear about each step and about how we are going to connect each step with the next. If we are not clear about what we want to teach we shall soon lose the interest of the class.

If we are going to teach a skill we must be sure we know, and can put into practice, the best methods.

The better we can show the children how to perform the necessary movements, the better chance they have of learning correct methods from the beginning.

Good preparation helps us to hold the interest, and therefore to keep control, of our class.

ORGANIZE THOROUGHLY

Organizing our lesson is part of the preparation. Everything we and our pupils are going to use in the lesson must be ready to hand. It wastes time if we have to send or look for this or that in the middle of a lesson, and the children's attention wanders when the lesson is interrupted.

MAKE THE BEST USE OF ALL THE APPARATUS YOU CAN GET

The more closely our teaching is connected with life, with real things both living and non-living, the better. It is difficult to make too much use of apparatus, but it is also often difficult to get enough to use. The best teachers use plenty. If it is not supplied by the school, they find materials and make it, with the help of their pupils.

Though most of us have less apparatus than we should like, we do not all make the best of what we have.

The blackboard is a valuable tool which every teacher must learn to use well. Every teacher can get sticks, clay, and sand, which have endless uses in class teaching.

Children from eight or nine years old should have an atlas and a dictionary handy in every lesson in which they do any reading and writing, and should learn to make full use of them. The teacher should have always handy, besides a good atlas and dictionary, a one volume encyclopedia (e.g. Pear's) and a recent

edition of Whitaker's Almanac or some similar publication.

TEACH THE WHOLE CLASS

It is very easy to give too much attention to the more able pupils. In every class a few pupils are always ready to answer a question, and we often let them do all the answering while the rest sit and listen. This is not fair to the rest.

We must try to teach the whole class, however large it may be. Every pupil should have a fair share of the teacher's attention, and do a fair share of the work.

When we ask questions, no pupil should be left out, and no pupil should be able to guess who will be asked to answer the next question.

Every pupil's written work should be corrected.

We should stand where we can see the whole class, and where the whole class can see us, though it is not necessary always to stand in the same place.

Every pupil must be able to read easily what is written on the blackboard, and from time to time every pupil must have a turn at coming to the blackboard and using it before the rest of class.

Every pupil must be able to hear clearly all we say ; but if we speak too loudly we shall tire ourselves and our pupils, and may also disturb other classes. Children listen best to *slow* speech which is just loud enough for all to hear clearly. They like a quiet teacher.

TRY TO BE CALM AND NATURAL

This is not so easy when we are learning to control a large class.

Careful preparation and organization, and a real interest in what we are teaching, are our best aids to

self-confidence; and if in addition we like children, and like teaching children, we shall soon forget ourselves and our fears.

THE TEST OF CLASS TEACHING IS CLASS WORKING

We must remember that our first job is to stimulate activity in every pupil in the class before us.

In preparing our lessons we must think out carefully what the pupils are to *do* in every lesson. The teacher who knows how to keep children busy has little trouble with class discipline.

Some teachers are afraid to give a large class too much to do, for fear of having too much work to correct in their spare time. We can overcome this difficulty to some extent by setting work which does not take too long to correct, maps and diagrams for example, or work which it is educative for our pupils to correct for themselves in class.

When a class is set so much work to do in a given time, the quicker pupils often finish first and have nothing to do for the rest of the lesson. This wastes their time and kills their interest.

To avoid this we can either set an amount of work which only the quickest pupil can finish in the given time, and tell the rest to do as much of it as they can, or we can set extra work for those who finish before the period is up.

MAKE FULL USE OF THE CHILDREN'S KNOWLEDGE

Every lesson should begin with reminding the children of what they already know of the subject.

As the lesson goes on, we should do all we can to get the children to use their own knowledge to help them co-operate with us in what we are trying to do. It is a sign of good teaching when the children freely

offer their help, based upon their own experience, in carrying out the aim of the lesson.

We should welcome this help, even if it takes us off the line of development we have planned for the lesson ; the spirit of co-operation is worth a change of plan.

At the same time we must not let the children ' lead us up the garden path', and waste our time and theirs by introducing subjects completely unconnected with the aim of the lesson, whether they do this on purpose or unconsciously.

Children are naturally interested above all in their own experience, and if we are not careful they may get into the habit of switching every lesson from what we want to teach to what they want to talk about.

MAKE USE OF ROUTINE WHERE ROUTINE IS HELPFUL

There are certain things such as cleaning the blackboard, opening windows, setting out materials and apparatus, which should have a settled routine.

This means that there should be a habitual way of doing these things, a settled time for doing them, and a regular way of settling who is to do them. If we organize regular classroom habits, much time and effort is saved for more important matters.

We must not become slaves to our routine so that we are afraid to change it when by doing so we can gain some advantage ; but children like regular habits, and such habits help both pupils and teacher to get on with their work.

OBSERVE, AND EXPECT YOUR PUPILS TO OBSERVE, COMMON POLITENESS

We shall get more done, and get more pleasure in doing it, if we remember to be polite to our pupils and to see that they are polite to us and to one another.

'Punctuality is the etiquette of kings', and we cannot expect our pupils to be punctual if we have had the bad manners to be late for our lessons or any other appointments we have with them.

Children copy their teachers and it is easy to tell by the children's behaviour to one another, especially to those younger than themselves, whether their teacher's manners are good or bad.

To speak when others in the same room are speaking is not always impolite according to popular custom, but in the classroom it wastes time and effort and must always be considered bad manners. Children must learn to speak in turn, and to listen when one of themselves is speaking to the class or to the teacher.

It is a mistake to expect too much formal good manners in children under five or six years old. They are far too full of themselves and their own business for it to be natural for them to remember small politenesses. But in the primary school both teachers and pupils should remember their 'Please' and their 'Thank you'.

The basis of all good manners is consideration for the needs and the feelings of those about us, and proper attention to formal politeness is a step towards learning that true respect and consideration for our neighbours which is necessary for their happiness and and for our own.

LET THE CLASS CO-OPERATE IN KEEPING ORDER

Class discipline is a difficulty for many teachers both old and young. Much help in keeping order can be obtained from the children themselves once they are beyond the infant stage.

Every class works and behaves the better for some measure of self-government.

This self-government can be a very valuable training in democracy and co-operation, and we can hardly have too much of it. On the other hand we must be very careful to introduce it gradually, and to prepare the children thoroughly for each step.

If we force too much freedom and responsibility upon children before they are ready for it, we only worry and confuse them.

Most children want to behave well and dislike being allowed to behave badly. The test of each step in self-government must be whether it does, in practice, help the children to behave well.

All plans for self-government must be based on a careful consideration of the kind of children with whom we are dealing, of their stage of development, and of the conditions in which they live and work both at home and at school.

★ ★ ★ ★ ★

Miss Catty points out that in class-teaching we can never hope to give a perfect lesson.

We have to teach up to forty or more children at once, children with different knowledge and different interests, and keep them all interested.

We have to give attention to every one of the children at the same time that we are trying to present some skill or knowledge to the class as a whole.

It sounds impossible, but, as Miss Catty adds, 'If the lesson is carefully prepared, suitable to the class, and given in a business-like and cheerful way, the average child in the average class attends.'

X : How to Encourage Self-Activity

All healthy children want to be active, but not always in the ways that parents think good for them.

Our problem is to find outlets for the children's instinctive urge to activity which are both satisfying to the children and approved by society.

We shall not make children active if we forbid and repress the activities they choose for themselves.

If we follow the old nurse's rule of ' See what the child is doing and tell it not to ' we shall either drive our children into activities even less desirable than those they follow if left alone, or we shall reduce them to a state of mind in which they refuse to take any interest in anything we suggest.

The rule must be that if we do not approve of what the children are doing, then we must find them something better to do, better from their point of view as well as from ours.

From this it follows that our first aim must be to provide our pupils with suitable activities.

This is easier to say than to do ; it is indeed the central problem of the education of the child from the very day of its birth.

PROVIDING SUITABLE ACTIVITIES

Suitable activities are those which are satisfactory to the children and good for them, and once we can find such we have won more than half our battle.

We can solve this problem only by finding out and

making use of the children's own interests and purposes. Our aim must be that by doing what they like doing the children shall learn what they need to learn.

All children like playing games, and we can safely begin with play-way teaching. This is much used in the Scout and Guide movement, and *Scouting for Boys* is a book all teachers may well consult for hints on method.

We can learn much about each pupil, and about children in general, by watching our pupils playing among themselves. This will help us to find out which of their instinctive urges are most active at the stage of development they have reached, and upon these urges we must base our choice of the activities we shall use for teaching purposes.

For example, if we learn from watching our pupils at play that they have reached the 'gang' age, the age at which boys like to do everything together in small groups of boys, and girls in small groups of girls, we shall use group methods as much as possible in our teaching.

Again, if we see that some of our older pupils are wandering off alone, to think or dream or read by themselves, we shall know that for them individual methods such as the 'Dalton plan' will be more suitable, but that some encouragement of co-operative activity will also be needed to help them keep a healthy balance between individual and social activities.

We cannot indeed know too much about the interests and abilities of each of our pupils, or about child psychology in general. This knowledge will help us both in choosing suitable activities and in organizing and guiding the activities we choose.

We must encourage every effort at self-activity or self-expression, however poor and rough the first results may be.

Children often fear to express themselves, to write or paint or model from their own experience and imagination, because they are not sure how grown-up people will react to their efforts.

If children find that their efforts at self-expression are received with understanding and sympathy, they are encouraged to go on and improve.

If on the other hand their efforts meet with scorn, impatience, or lack of interest, they may shut themselves up like snails in their shells, and we shall not find it easy to draw them out again.

Some are not easily discouraged in this way. Others, especially those who have just started coming to school, and those who have reached the stage of adolescence (roughly from 12 to 16 years), are very uncertain of themselves and their powers, very lacking in self-confidence, and so need all the sympathy and encouragement we can give.

CHILDREN NEED CHANGE AND VARIETY

Activity falls off when the work is all too much the same, and when one lesson and one school day are too much like the next.

There should be plenty of different things for the children to do in each school day, and we should vary the school routine from time to time by such means as educational walks and longer journeys, competitions with other schools both in work and in play, concerts and exhibitions, getting interesting people from outside the school to come and talk to the children and especially to answer their questions, and keeping a

good look-out ourselves for new and better ways of teaching, new books, new ideas, and new apparatus.

BE PREPARED

Activity work needs careful preparation. There must be enough material and tools, so that each child can be active and we do not find one child busy while four or five others are looking on because they have nothing to work with.

Our tools, materials and other apparatus must be ready before the lesson starts. Children have little patience ; they like to get on with the job, and they lose interest if they have to sit and wait while first one thing and then another has to be found or fetched.

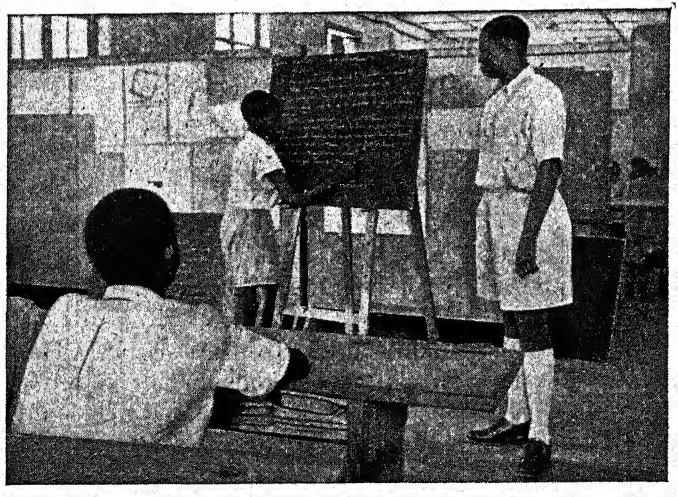
Activity work needs plenty of room and suitable surroundings. It is often done best out-of-doors.

THE USE OF PROBLEMS

Children can always be interested in solving problems provided that the problems are neither too easy nor too difficult, and have some connexion with their own interests.

The younger ones like riddles and puzzles, and such activities as matching sentences with pictures and solving simple number problems ; these are useful as means both of presenting knowledge and of encouraging active thinking.

Later on, the more of our work (in such subjects as mathematics, history, geography, science and civics) that can be presented in the form of interesting problems for the children to solve with the help of the teacher, the more active the part in their lessons the children will learn to take.



Class Teaching.—The good class teacher is careful to share the teaching with pupils. Scenes from African and English Schools.

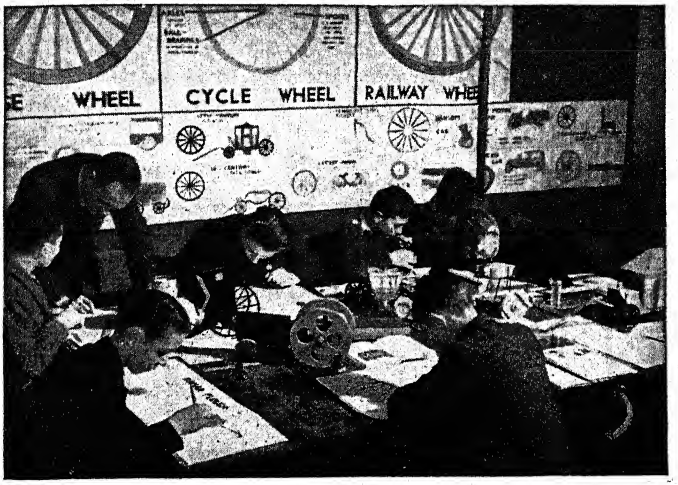
An outdoor Project.—These students are making a model village, and they learn a great deal about building and planning while they do so. The class works together as a team.

THE PROJECT METHOD *

In this method the teacher helps the children to choose something they wish to do, such as making an oil-palm plantation or a scale model of the school compound. That is the project, and the children, working together as a class or in separate groups, carry it out with the help and guidance of the teacher.

The project forms a centre of interest, and carrying it out leads the children into various activities. They will usually have to collect materials and make use of them. They will need new knowledge and new skills. They will have to plan their work and share it out between them. The better chosen the project the more they will learn from carrying it out.

* *See Chapter* XXVI *for a fuller discussion.*



An Indoor Project.—This class is studying the wheel. Their project calls for drawing, much reading of history books—and some mathematics. Here too the class works as a team, but the work is divided into individual assignments.

In many lessons the children take little interest because the lesson aims at something which seems too far away and they cannot see the use of what they have to do. When however they are working on a project they can see clearly the reason for everything that has to be done.

The aim of the project is not something far away and difficult, like 'learning to think for themselves', but something they are going to carry out within a given time, a week, a term, or a year, something clearly limited, like building a shelter for bicycles or writing and producing a play.

CHILDREN LIKE HELPING

If we can make them feel that we value their help

and that it is of real use to us, children enjoy helping in the work of the class and the school.

One child may have first-hand experience in some subject we are teaching, and will like to prepare notes and give the class a talk on it.

Another may be good at reading aloud, and will enjoy preparing and reading the passage chosen for an appreciation lesson.

Children with artistic ability will enjoy decorating the classroom with wall paintings, and painting the scenery for a class concert.

It may be merely a matter of making helpful suggestions for solving some problem the class has been set; but whatever form their help may take, if we show that we value it, and if we actually make use of it, we shall encourage the children's desire to help and so stimulate their activity.

We may also encourage children to help one another, either in groups or by the 'each one teach one' method.

This helps not only those who get help, but also those who give it, because teaching something is a very good way to make our knowledge of it complete and lasting.

It encourages children who are backward in any subject to see that we cannot all be good at everything, especially if A can help B in one subject and B can help A in another.

Setting children to help one another often brings out in pupils a great deal of knowledge, skill, and teaching ability which we might not otherwise discover.

HOW MANY ACTIVITIES ?

Especially in the primary school it is important to have a number of different activities, so that each

child has a chance to find at least one thing he or she likes doing and can do well.

Learning to do one thing well gives a child self-confidence which leads to better work in all subjects.

COMPETITION

Competition is useful to encourage activity; but except in the less interesting subjects, such as learning to spell, it is not educative for the children to become more interested in the competition than in the subject.

Competition between groups is usually healthier than competition between individuals, which sometimes has bad effects both on the winner and the loser.

Holding exhibitions of work encourages a useful kind of competition and is a good means of stimulating creative activity. Other such means are putting up specimens of good work in an important place in the school, or collecting them in a class or school magazine or wall-newspaper.

Exhibitions should be held, magazines and newspapers issued, and specimens of good work put up in the school, *regularly*, and neither so often that the work takes up too much time and gives teachers and pupils too much trouble, nor so seldom that for most of the time nobody thinks about them at all.

THE EXPRESSION OF EMOTION

Good appreciation lessons encourage activity. Older children who learn to enjoy such arts as writing, music, and painting will be encouraged to try their hands at expressing their own thoughts and feelings by means of the arts they like best.

Younger children will want to act a story that they have enjoyed, or will invent games to play based upon the people in the story and what those people did.

We must be always on the look out for opportunities for the feelings awakened in appreciation lessons, and in lessons in religion and morals, to find suitable outlets in activity.

THE HUNGER FOR SKILL

Every school, infant primary and secondary, should provide both opportunity and encouragement for plenty of handwork.

Activity of hand and eye helps to develop activity of mind.

Civilization began only a few thousand years ago, and for millions of years before that all men and women spent most of their lives doing and making things with their hands.

We are in fact hand-using animals and if we have no opportunity of learning to use our hands the development both of body and of mind will be held back.

Schooling in the past has meant far too much listening for the younger children and too much book study for the older ones. A sound education develops all our senses by means of a variety of activities.

In the encouragement of manual activity much depends upon the attitude of the teacher. If we cannot, or will not, use our own hands we cannot expect our pupils to take much interest in doing things with theirs.

If we ourselves have a pride in some kind of manual skill, even in such every-day skills as handwriting or gardening, this will do a great deal to encourage a respect for such skills, and an interest in them, in our pupils.

SUIT THE ACTIVITY TO THE CHILD

We must take care to choose the right activities for each stage of a child's development. It is worse than a waste of time to try to push children into activities for which they are not yet ripe.

What children do or make they must be able to do or make with a reasonable measure of success ; otherwise they will get no satisfaction from their work and will soon lose all interest in it.

The jobs we set young children should not take them too long to finish. They like to see results quickly. If the work takes too long, so that at the end of a lesson they have to leave it unfinished, they lose interest.

If a job is to take a number of lessons to finish, then they should see some clear signs of progress, have 'something to show', at the end of each lesson.

Some children are discouraged by small difficulties; others are stimulated by difficulties almost too great for them. A good teacher knows just how much to expect from each child.

XI : The Art and Objects of Questioning

The success of our teaching depends to a very great extent upon our skill in questioning. Good questions set our pupils thinking and direct their learning.

Once children have mastered the necessary habit-skills such as reading, writing, and the arithmetic tables, the question is the key to all teaching.

We must therefore learn to ask the right questions, and to ask them in the right way.

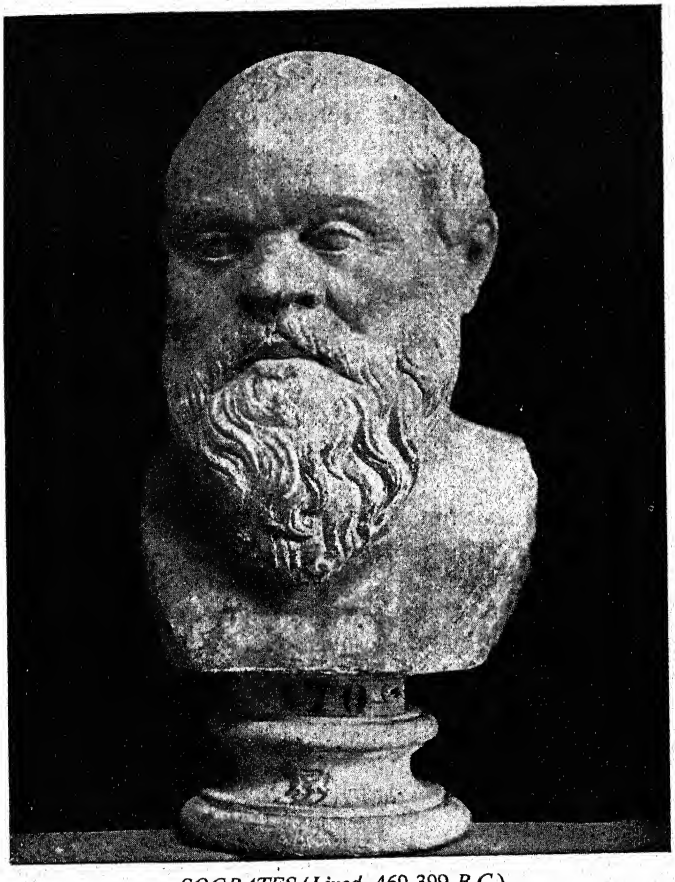
WORDING OUR QUESTIONS

Anyone can ask a question. But in questioning a class we have to be sure that the wording of our questions makes quite clear to everyone in that class exactly what we are asking. This is not easy. To do it well we need a good knowledge of our pupils, of our subject and of the language we are using, and we need both thought and practice.

It looks so easy. Anyone with a good knowledge of English idiom, for example, may ask a primary pupil, 'What is your father?' But it is hardly reasonable to expect children whose first language is not English to know that this is an idiomatic way of asking, 'What work does your father do to earn his living?'

LOGICAL ARRANGEMENT

If we want our pupils to think clearly and to connect new knowledge with, and relate it to, what they already



SOCRATES (*Lived* 469-399 *B.C.*)

The famous Greek philosopher who developed the art of questioning. He used to sit in the market place of Athens, to discuss politics, human affairs and morals with anyone who passed by. In this way he found that most people hold beliefs and opinions which they have never really thought about. His method was to ask questions; if the reply was vague or unsatisfactory, he put more questions, until the other person discovered for himself what the mistake was. Many people do not like to be proved wrong, even by the Socratic method, and Socrates made many enemies. In the end he was put to death.

know, we must do more than word our questions in a clear and fool-proof manner.

We must frame our questions in such a way, and arrange them in such an order, that they encourage clear, orderly, and well-connected thought.

Each question must be connected with the one before it, and lead up to the one that comes after it. Our questions must bring to the pupils' notice the important points in the subject about which we are questioning them, and bring those points to their notice properly connected and related, and in the right order.

Good questioning depends upon clear thinking.

THINKING QUICKLY

It is not enough to think clearly when we are framing our questions. We must also learn to think quickly when we are asking them.

When we frame a question we usually have an answer in mind which will carry the class forward in the direction of our next question.

In class we may get an answer which is too interesting or important to pass over, but is not at all the answer we expected and does not lead towards our next question.

We have to decide quickly. Shall we follow up the new line of thought suggested by the unexpected answer, or shall we pass over it and return to our own line of thought and the next question in our note-books?

The pupils' answers will be based upon their own knowledge and interests, and these we must make use of whenever we can.

It may therefore be very well worth while to depart from the set of questions we have prepared, and to frame as we go along new questions following up the

line of thought suggested by the pupil's unexpected answer. This calls for a quick decision and a good deal more quick thinking after that.

For example, we may ask the class why on a hot day in June Ibadan is usually hotter than Lagos, although Lagos is nearer the equator: expecting the answer that Ibadan is farther from the sea.

But we may get the answer that in June the sun is in fact higher at noon in Ibadan than it is in Lagos.

This answer takes us away from our line of thought about the connexion between temperature and distance from the sea, and suggests a discussion of the connexion between temperature and the angle of the sun above the horizon at noon, a more difficult subject but one in which the pupil who answered must have taken some interest.

Which line shall we follow, and if we choose our pupil's line, what question shall we ask next ?

Clearly we must decide quickly which line of development is likely to be most useful to the class as a whole, and follow that.

SELECTION

There may be hardly any limit to the number of questions we can ask on a subject, but there is a limit to the number of questions which it is useful to ask in teaching the subject in the time allowed us to teach it.

Again there is hardly any limit to the number of different ways in which we can put the same question, but some ways will be more suitable to our purpose than others.

We have therefore to select carefully the questions we shall ask and the ways in which we shall put them.

In considering our subject matter we have to select the key points on which we must ask questions, points

the importance of which we must bring out by means of our questions.

We have to select also those points which we can lead the children to understand for themselves by means of questions, and those points which will need some explanation before we can usefully question our pupils upon them.

We have to divide our questions into 'teaching' questions and 'revision' questions, and divide our time between these two kinds of questions.

THE OBJECTS OF QUESTIONING

In everyday life we ask a question because we want to know the answer. This is not usually the object of the questions we ask in class. To begin with we usually know the answer to such questions before we ask them.

Some of the objects of class questioning are :—

1. To find out what our pupils know.
2. To remind them of what they know.
3. To develop a line of thought.
4. To find out if our pupils understand what we have been teaching.
5. To find out if they can use their knowledge.
6. In general, to encourage them to think for themselves.

FINDING OUT WHAT OUR PUPILS KNOW

In the steps we have called 'preparation' and 'revision' we ask questions to find out what our pupils know.

There is sometimes a temptation to show how clever we are, and how stupid our pupils are, by asking questions which bring out rather what our pupils do not know, questions which they cannot answer. Such

questions are not merely useless, they are harmful because they undermine the pupils' self-confidence, which it is our job to help them to build up.

REMINDING PUPILS OF WHAT THEY KNOW

We can use questions to awaken interest and command attention. Such questions bring to the minds of the pupils something in which they are interested.

For example, 'Have you ever seen an aeroplane?' might be a useful way to open a lesson about African air routes.

We do not usually ask this kind of question unless we are fairly sure that most of the pupils are going to answer, 'Yes.'

DEVELOPING A LINE OF THOUGHT

Here is an example of the use of questions to develop a line of thought :—

Have you ever seen a cotton plant?
Where did you see it?
What is it like?
How do we get cotton from it?
Where does it go after it is picked?
Where does it go after that?
What is done to it there?
When it has been spun into thread what happens next?
What happens to the cloth?
What do you do with the cloth?

Now and again, in going through a list of questions such as this, we may come up against one which the class cannot answer, and we have to supply the answer ourselves.

Such lists of questions are of very great value in helping children to arrange connect and relate facts,

provided that most of the necessary facts are already known to them.

WORDS OR MEANING ?

When pupils write such statements as 'The force of gravity varies *immensely* as the square of the distance between two bodies ' it is clear what has happened : the difficulty of the subject, or of learning the subject in a language which is not their mother tongue, has forced them to depend upon memory rather than upon understanding.

We must find out whether our pupils understand the answers they give, or whether they have only memorized the words in which to answer the questions.

If, for example, we ask, 'What is a line of latitude ?' we may get from our class a correct answer which the pupils have learned by heart and do not understand at all.

But if we ask them to open their atlases and show us a line of latitude, and if they can do that we say, 'The latitude of Dunkwa is about 6° N. About how many miles is Dunkwa from the Equator ? ' we shall be on the way to finding out whether they understand the meaning of what we have taught them about latitude.

CAN OUR PUPILS USE THEIR KNOWLEDGE ?

We test and complete our knowledge, and make it lasting, by putting it to practical use ; and in many subjects we can frame questions which cause our pupils to make use of their knowledge.

A lesson on the life-history of the mosquito can be followed by questions on how to prevent mosquitoes breeding round the pupils' homes. When children have learned the meaning and use of some new idiom we can ask them questions which will make them use

the idiom in their answers. When we have explained latitude, we can ask them to estimate the latitude of various towns shown in their atlases. We can follow a lesson on the different foodstuffs by asking the pupils what foods they ate the day before and what foods they ought to eat every day to keep themselves strong and healthy.

ENCOURAGING PUPILS TO THINK FOR THEMSELVES

Questions which develop a line of thought, and questions which discover whether children know the meaning of what they have been learning and can make use of their knowledge, are all questions which encourage thought rather than test memory.

★ ★ ★ ★ ★

These are the most important kinds of question, and the kinds we shall use most often.

In the lower classes, where a great deal of memory-work is necessary, and the children are at an age when they are interested in people and things but not much interested in reasons and causes, the object of our questioning will be chiefly to find out what the pupils remember.

As our pupils go up through the school memory-work becomes less important, and learning to think more important. More and more of our questions will begin with the word 'why', and will have the object of encouraging the children to think for themselves about the subjects they are learning.

For further reading on the use of questions, students are advised to consult *The New Examiner* by P. B. Ballard.

XII : When and How to Question

Questions are useful, at the beginning of the lesson, in our preparation ; in the course of our lesson, to make sure that our presentation is properly understood, to lead the pupils from one point to the next, and to call their attention to important points ; and at the end of the lesson, as a means of revision.

AT THE BEGINNING

We begin by asking questions to find out what the children already know of our subject, and to connect that knowledge with what we are about to teach.

These questions turn the children's attention to the facts or ideas we wish them to have in mind to form a starting point for some new knowledge.

THROUGHOUT OUR PRESENTATION

We must make sure that the children understand what we are telling them and what we and they are doing, and we do this by means of questions.

The children however will lose interest if we keep stopping to ask questions in the middle of a story, a description, or an exposition.

It is better therefore to finish our story or description, or to complete a stage in our exposition, before we ask questions about it.

The questions we ask during our presentation should make the pupils think. It should not be possible to answer them merely from memory.

We have to make sure the children understand the words we use ; but to explain the meaning of a word is often a difficult job for young children, even if they know the meaning and use of the word quite well. On this point H. Dippie says :—

' Once a tiny little boy read a sentence containing the word ' sky '. The teacher was told to find out whether the boy understood. He at once asked " What is the sky ? "—an impossible question for a five year old boy . . . . a simple method of testing such small boys is " What can you see in the sky at night ? " or " Where did you see the moon last night ? " If the boy can answer these questions it is quite clear he knows the meaning of ' sky ' and can use his knowledge, without being able to give a synonym.'

IN PASSING FROM ONE POINT TO THE NEXT

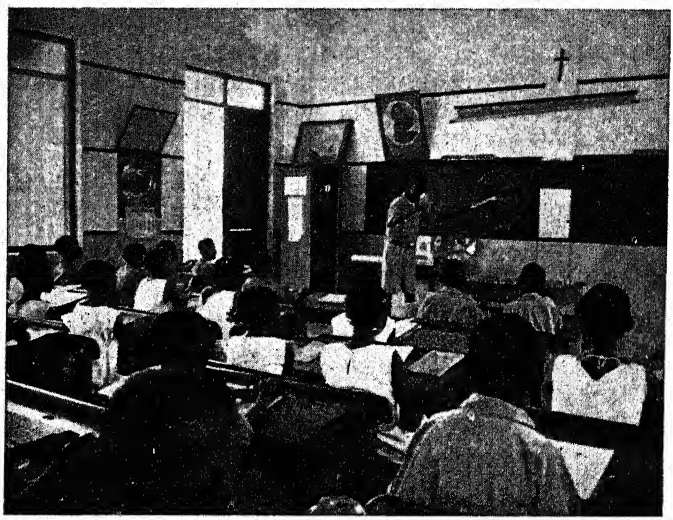
Whole books of exposition have been written in the form of question and answer, the first sentence of each paragraph or section being a question and the rest of it the answer.

This method of connecting our material is very suitable for teaching. It makes clear to our pupils the aim of each step in our exposition, stimulates their co-operation in carrying our subject forward and puts what is to come next in the form of a problem to be solved by the class and the teacher working together. We have given an example of this use of questions under the heading of ' Developing a line of thought ' in the last chapter.

IN CALLING ATTENTION TO IMPORTANT POINTS

This kind of question catches the children's interest by making a sudden break in the lesson.

We may also use it to help children examine an



Revision questioning in the arithmetic lesson. The pupils are attentive if they do not know who will be asked the next question.

object of any kind. Our questions direct their attention to important points about the object, and help them to observe it thoroughly and notice its points of interest in the most useful order.

IN REVISION

We have said that every subject has its own 'grammar'. The best way to memorize this grammar is to go over it frequently by means of questions.

The questions make the children work actively through the material which is being revised, and put reason as well as memory to work upon it.

Even when the 'grammar' of a subject has been thoroughly memorized, some teachers ask a few revision questions on it before beginning each lesson,

to make sure the pupils do not forget it again.

The answers we get to revision questions are often sadly disappointing, especially if our revision has not been frequent enough; and we wonder what we have been teaching all the term.

But if we are to find out the mistakes which creep into even the best teaching and the most intelligent learning, and to correct those mistakes, we must find out by questioning whether the children have taken in what we think we have taught.

HOW TO QUESTION

1. Ask the question before you name the pupil.
2. Spread questions evenly over the class.
3. Give the pupil time to answer.
4. Avoid ' leading ' questions.
5. Do not try to force answers.
6. Adjust the question to the pupils.
7. Announce each question once only.
8. Put the question so that the class understands what you want.
9. Do not accept the first correct answer.
10. Put old questions in new ways.
11. Build up the self-confidence of your class.

QUESTION FIRST

Ask the question. This will set the whole class thinking out the answer. Then name the pupil who is to make the first attempt at answering. If we name the pupil before we ask the question, the rest of the class may not bother even to listen to it. Thirty heads are better than one. A class will produce more complete and more interesting answers, and learn more from our questioning, if every member of the class takes an active part in thinking out every answer.

SPREADING QUESTIONS EVENLY

In the course of a week or a month, every pupil should have to answer about the same number of questions in each subject. In large classes it is often impossible for every pupil to answer even one question in every lesson.

We should not ask questions in any regular class order. If the rest of the class can guess which pupil is going to get the next question, they may not bother to listen to it.

We must be careful not to get into the habit of giving certain pupils, those in front, for example, or those right at the back, or those who usually give good answers, more than their fair share of questions.

It is little trouble to have a class-list before us when we are questioning, and to put a dot against the name of the pupil asked each time we ask a question. With very large classes some such record is necessary if we are to spread our questions evenly over the whole class.

GIVING PUPILS TIME TO THINK

When we ask a question we should give the pupils time to think out the answer. If we try to hurry them, we shall only succeed in making them slower, but if we allow them plenty of time at first, so that they do not try to hurry, they will in the end learn to think more quickly.

There is an exception to this rule. When we are revising the 'grammar' of a subject, for example a table in arithmetic, a pupil must answer quickly or not at all.

Such answers are more a matter of skill and habit than of knowledge and thought. They should fall out of the pupils' mouths before they have time to think.

The time allowed for answering will depend upon

the kind of question, and upon the particular pupil who has to answer it. Some pupils need more time than others to think out their answers.

Questions requiring a good deal of thought and fairly long answers may be written on slips of paper. A pupil can draw a slip with a question on it, and be given some minutes to think out the answer while the rest of the class gets on with some other work.

AVOID LEADING QUESTIONS

A leading question is one which, by its wording, suggests its own answer. Except in teaching the English language, 'The old man had a big stick, hadn't he?' is a bad question, because if the pupils do not know the answer, the wording of the question will lead them to say 'Yes.'

'Don't you think this poem is beautiful?' is a particularly harmful type of leading question because it encourages children to say not what they think but what they believe the teacher wants them to think. It is likely to cause insincerity.

TRYING TO FORCE ANSWERS

A good teacher sees at once when a child does not know, or cannot remember, an answer, and at once passes the question to another pupil.

Some teachers waste much time and effort trying to get answers out of children who just cannot answer. This may even become a kind of bullying, an attempt to punish the children for not knowing what they ought to know. If our pupils do not know what they are supposed to have been taught, it is we rather than our pupils who are responsible.

We may sometimes help a child to answer by going back and asking a few easier questions which lead up

to the one the child has failed to answer. In such a case we have to consider whether it is worth while spending this extra time on a single pupil when there is a whole class waiting to be questioned.

ADJUST THE QUESTION TO THE PUPIL

A question should be neither too easy nor too difficult for the pupil who has to answer it.

Our rule should be that our questions should be a little on the difficult side for the pupil who has to answer, except in the case of a pupil who lacks self-confidence and needs encouragement, and who should therefore be given fairly easy questions for the time being.

ANNOUNCE EACH QUESTION ONCE ONLY

If we say every question two or three times over the class will get into the habit of not listening to a question the first time we ask it.

We should repeat a question only if it is clear that some of the pupils have not heard it properly. If we see that the class does not understand a question, then we should ask the same question in another way, or ask a second and easier question leading up to the first one.

PUT THE QUESTION SO THAT THE CLASS UNDERSTANDS WHAT IS WANTED

This is chiefly a question of wording. We must be careful not to word our questions so that they can be taken in more than one way. Also we must remember that it is easy to see the meaning of a question when we know the answer we want, but that the meaning may not be so clear to those who hear the question without having the answer already in their minds.

For example, with the answer 'The Capital of Nigeria' in mind, a teacher may ask, 'What is Lagos?' But there are several answers to this, all of them correct. Lagos is a city, a seaport, an airport, a railway terminus, a trading centre, an island, a colony, and a seat of Government.

DO NOT ACCEPT THE FIRST CORRECT ANSWER

If we always accept the first correct answer, the pupils will see that when we ask a question a second time it is because the first answer was wrong, and so they will try to give an answer different from the first.

We may from time to time wish several pupils to think out carefully and put into words the answer to the same question; so we must let the pupils see that when we pass over and ask the same question a second or third time, that does not in every case mean that the first was wrong.

OLD QUESTIONS IN NEW WAYS

An excellent way of encouraging pupils to think, and of making it impossible to answer only from memory, is to think of new and unexpected ways of asking questions.

We can for example ask our pupils what causes a rainbow; or we can ask them what will be behind their backs, and what will be coming down in front of them, if they stand and face a rainbow; or we can ask them in what parts of the sky they see rainbows, in what sort of weather and at what times of the day; or again, we can ask them why, in Africa, we never see rainbows in the middle of the day or when there is no rain about. Here are four different questions, but they are only four different ways of asking the same question.

BUILD UP THE PUPILS' SELF-CONFIDENCE

It is important to do all we can to give our pupils the idea that they can answer our questions, especially when it is a matter not of remembering the facts but of thinking out an answer based upon the facts.

If we give them the idea that we think they are stupid and backward then we shall discourage them, and they will not even try.

Our aim in asking questions should be to give our pupils a chance to show us how much they know and not to give ourselves a chance of showing our pupils how much we know.

If we say, 'This is an easy question, but I don't expect you can answer it,' they will probably fail ; but if we say, 'This is a difficult question, but I believe you can answer it if you think it out carefully,' they will probably succeed.

XIII : Pupils' Answers and Pupils' Questions

PRAISE

If we want to encourage our pupils to answer questions, and answer them well, we must show our pleasure in every answer which is in any way helpful.

We must always point out where an answer is wrong ; but we should praise every answer which makes sense, and is the result of some thought about the question, even if it is not correct.

INCOMPLETE ANSWERS

An answer which is only partly right may be used as a starting point, and a correct and complete answer gradually built up from it by further questioning.

The rule is to make the most of every answer or attempt at an answer. ' That is right as far as it goes ; can anyone add anything to it ? ' or ' That is partly right and partly wrong ; can anyone see where it is wrong ? ' will give the necessary encouragement, and lead to a further development of the subject. Children are usually interested in discussing an answer given by one of themselves.

WRONG ANSWERS

When an answer is wrong we should say so, and explain how or why it is wrong.

It is not helpful just to say, ' That is wrong,' and leave it at that. Our pupils will learn little if they are told only that this is right and that is wrong, without any further explanation.

They may be able to see that the wrong answer is different from the right answer, but that is not much use if they do not know what made the first answer wrong.

A wrong answer, like an incomplete answer, is often a useful starting point for discussion : we can set the class to finding out what is wrong and putting it right.

It is also good for the pupil who gives the wrong answer to find out the mistake and correct it, provided that this does not waste the time of the rest of the class.

THE WORDING OF ANSWERS

We must make sure the children understand the meaning of their answers and are not merely repeating a set of words from memory.

When children are answering in a language which is not their mother tongue we have to pay careful attention to the words and phrases they use, because it is very easy for them to get hold of wrong meanings.

If our pupils use in English any word or idiom which seems to us at all difficult or out of the way, we should ask them to express its meaning in other words or in the mother tongue. This is particularly necessary in classes where all or nearly all the teaching is done in English.

HELPING PUPILS TO ANSWER

As a general rule we should not help pupils with their answers.

If pupils find that they can murmur a few words which roughly suggest a correct answer, and the teacher will then put their proper answer into words and complete it for them, they will get into the habit of giving half-finished answers and will not bother to think

their answers through properly before they give them.

It is usually better to ask a second pupil to help the first in such cases, because this is more likely to encourage pupils to do all they can to word their own answers properly and make them complete.

ANSWERS IN COMPLETE SENTENCES

There can be no hard and fast rule about whether or not answers should be expressed in complete sentences. This depends chiefly upon the kind of lesson and upon the aim of the lesson.

In most spoken work we should accept the wording of the answers which would be used in ordinary conversation.

When the aim of a language lesson is to practise the use of some idiom, or in some other way to develop the complete and correct expression of ideas in statements, answers must be given in complete sentences.

Complete sentences are also necessary in answer to questions which aim at helping children to think out and to express correctly difficult and important ideas in such subjects as mathematics, science, history or geography.

We must avoid making children answer in complete sentences in cases where this is neither natural nor necessary, because if we do so we may get them into habits of speech which will sound strange and unnatural in ordinary conversation. When Mother asks Mary ' Where is my book ? ' we do not want Mary to reply, as a result of our teaching methods, ' Your book is upon the table in the parlour.'

CHORUS ANSWERING

We still hear classes answering questions all together in chorus. This is usually a very poor

method of teaching. It does not demand enough active thinking from each child to result in much learning. Chorus answering may sometimes be useful, if the answers are given slowly and quietly, and the teacher has a very good reason for using the method ; otherwise it should not be allowed.

Nor should we allow the more eager members of the class to shout out answers when some other pupil has been asked a question, or when any pupil makes a mistake in an answer or is slow in giving it. This is bad manners because it makes it impossible for every child to answer a fair share of the questions.

REPEATING PUPILS' ANSWERS

Some teachers have a bad habit of repeating every correct answer given by their pupils.

There is no reason for this except habit. The only good reason for repeating a pupil's answer is to call attention to it because it is a good answer or because it makes an important point, and if the teacher repeats every answer our repetition will not have this effect.

If we want an answer repeated because we want the class to pay special attention to it, a much better way is to ask a second pupil to do it.

NO ANSWER

Sturt and Oakden (*Matter and Method in Education*) point out that when we ask a question which no one in the class tries to answer, we must understand at once that we have chosen the wrong question, or asked the question in the wrong way.

Our job then is not to blame the class, but to think of some other way of putting what we have in mind ; it is neither good teaching nor good manners to keep

on stamping our feet and saying, ' Now then ! Come on ! Hurry up ! '

WELCOME PUPILS' QUESTIONS

It is a sign of good teaching when pupils are anxious to ask questions. We should welcome all useful questions. If we do this, and if we deal with the questions properly, we shall do much to encourage our pupils' interest and activity.

QUESTIONS MUST BE TO THE POINT

Pupils sometimes ask questions not because they are interested in the subject but in order to attract a little attention to themselves and to gain a little importance. These are natural desires, but unfortunately the questions asked in order to gratify them are seldom very helpful. They are usually off the point, and if we allow it they will lead us and the class away from the development of our subject.

The best way to deal with a question which is off the point is to tell the pupil who asks it to bring it up again at some more convenient time.

GOOD MANNERS

Pupils must learn to speak one at a time, and to keep quiet when a question is being asked or answered.

If the work is uninteresting, if they have too little to do, and if we enforce complete silence even when this is not really necessary, our pupils will be likely to use an opportunity to ask questions as an opportunity to make a noise and get out of hand.

Good manners depend to a great extent upon good teaching and upon discipline which is enforced not for its own sake but only in order that the class may be able to get on with the work.

ANSWERING THEIR OWN QUESTIONS

We should never answer a question if the pupil can reasonably be expected to find out the answer without being told it.

Sometimes a question may seem interesting and important enough to be used as the starting point of a project, and the whole class can then be set to work to find out the answer. If we ourselves do not know the answer, we should not be ashamed to say so. Our pupils will soon find us out if we try to pretend we know everything, and never make mistakes.

But leaving questions unanswered kills curiosity : so if neither we nor our pupils know the answer to a question we should set to work all together to find it out. This will usually take less time if we have handy the classroom reference books suggested in Chapter IX.

Some teachers appoint one of the pupils as the class secretary, one of whose jobs it is to make a note of interesting questions which are asked in class but cannot for one reason or another be dealt with at once, so that such questions can be brought up again when a suitable opportunity occurs.

DIFFERENCES OF OPINION

The answer to many questions is not a matter of fact but a matter of opinion. We can settle the question of which is the longest river in Africa with the help of a reference book ; but the question of who is the greatest African in history cannot be settled and we all have a right to our own opinion about it.

We should not therefore expect all our pupils to agree with all the answers we give them in reply to questions about matters of opinion. It is indeed a healthy sign if our pupils do not always agree with us, and it is a certain sign that there is something wrong

with them or with us if they do, because it means that they are not learning to think independently.

'Think for yourselves : your teacher may be wrong' is a useful maxim for pupils to remember.

METHODS WHICH ENCOURAGE QUESTIONS

We are not often troubled with too many questions. The difficulty is usually to get the class to ask enough of them. But if our pupils are interested in the subject they will ask questions about it, and the more interesting we make the subject, the more questions they will ask. One method which encourages children to ask plenty of questions is the Project Method. When they are planning a project, collecting materials and information, and putting their plans into practice, there are sure to be many things they do not know, things they cannot find or obtain, things they do not properly understand, and they have to ask questions to find out these things. Another method is to set the children to some sort of individual work, such as they have to do under the 'Dalton Plan'. Working by themselves brings children up against all sorts of difficulties. If the assignments are well planned, our pupils will not be able to get on with their work unless they understand what they are doing.

The result is that although the 'Dalton Plan' trains children to overcome their difficulties for themselves, it also makes it necessary for them to ask a good many questions, and under the plan the teachers put aside so much time every day for answering pupils' questions and helping them with their difficulties.

Whatever methods we use, however, children will ask questions if they are interested in the work and feel certain that their questions will be welcomed, and will be handled with sympathy and understanding.

XIV : Group Methods

ADVANTAGES

When we have to deal with thirty or forty pupils all at once it is not easy to find out very much about the special needs of each pupil or to do very much to meet those needs. We can do far more in these directions if we divide the class into several groups and deal with our pupils group by group.

Two difficulties of class teaching are that in a large class there is often a great difference in knowledge and ability between the pupils at the ' top ' and those at the ' bottom', and that it is not uncommon for a pupil to be good at one subject and weak at another.

By dividing the class into groups we can arrange that in each group the difference between the ' top ' and ' bottom ' pupils is far less than it is in the class as a whole, and we can meet the case of the pupil who is good at language but weak in mathematics by putting that pupil in the ' top ' group in language and ' bottom ' group in mathematics.

Group work has some of the advantages both of class teaching and of individual methods. Children learn to co-operate, but thay also have opportunities to show what they can do on their own, and to develop such qualities as responsibility and leadership ; and we can make allowances for the differences between them.

The group method is particularly suitable for project work. If a class works as a whole on a project it is often difficult to see that the work is fairly divided

and every pupil is kept active : this is much easier to do when the work is divided between several groups, or when we divide the class into several groups and give each group its own project.

Class teaching is difficult, above all, because most of the classes we have to teach are too large. Pupils carry out a project best in groups of two to ten pupils, five or six pupils and a leader being the best number for most purposes. For class teaching the best number of pupils is probably something between twelve and twenty. Group methods, in effect, allow us to turn one class which is too large to teach properly into several classes each of a ' teachable ' size.

THE SIZE AND COMPOSITION OF GROUPS

The arrangement of our groups will depend chiefly upon the work to be done and the children who are to do it.

A group may be made up of two children or of half the class. Much practice and memorizing in such subjects as language and arithmetic can be done in pairs, each child questioning the other in turn. In this way each child goes actively over the material a number of times in a lesson, whereas if all the questioning is done by the teacher each child can only answer a very few questions at most.

In studying a passage in a reader or other text-book a pupil who reads well can be put to help two or three weaker readers, making groups of three or four pupils.

Some schools are divided into ' houses ' and for some kinds of work children can be grouped by houses. The difficulty here is that too many pupils, or too many of the brighter pupils, may belong to the same house, so that the groups are very unequal in numbers and ability.

A useful method of grouping children according to their ability in any subject is :—

Group A : the most advanced 25% of the class.
Group B : the middle 50%.
Group C : the more backward 25%.

For inter-group competitions A and C can join forces against B. As we have said, a pupil who is in Group A for language may be in C for mathematics and B for handwork. (In a large class we expect to find roughly 20% above average, 60% average and 20% below average pupils. The percentages 25-50-25 however will usually prove workable and are more convenient as they allow of a 50-50 grouping for competitions.)

When we are dividing pupils into groups to carry out a project, we should do all we can to see that each pupil is in a group which has a job to do which is of interest to that pupil, and we must also see that each group has one or two pupils who show some powers of leadership.

SHARING THE WORK

Careful organization and continual supervision are necessary to see that each member of a group does a fair share of the work of that group.

We must see that the more active members do not do all the work while the rest of the group look on, and that the abler pupils do not keep all the more interesting jobs for themselves.

In any group there will be a leader or leaders. We must see that they use their powers of leadership to get the best out of every member of the group, and that the work and responsibility are divided as fairly as possible.

In competitions we should arrange the rules so that no group can win unless every member of it takes an

active part in helping it to win. In an inter-group sports competition, for example, we can give points in the high jump for every member of each group who clears the bar at say 4 feet, besides extra points for the group whose representative makes the highest jump.

PREPARATION AND SUPERVISION

The success of group work depends to a very great extent on each group being given a clear and complete explanation of what it has to do, and why it has to do it. It is not a matter only of telling the children what to do : we must also make sure they understand it properly before they start work.

In addition to this we must keep an eye on the groups all the time they are working. Group teaching is not a matter only of setting the groups something to do and then leaving them to get on with it.

We must go from group to group all the time they are working, making sure that each is doing the right work in the right way, and that every member is doing a fair share of what has to be done.

INTER-GROUP COMPETITIONS

Competition between groups is often a useful means of stimulating group activity ; but we should use it chiefly when the work to be done is not very interesting in itself and we need something to increase the children's interest in doing it.

We want children to work well because they are interested in the work, rather than because they are interested in winning a competition. We certainly do not want to turn out children who do their best only when they are trying to outdo some other person or group of persons. Competition is a good servant but it can be allowed to become a very evil master.

We have mentioned that group work is particularly suitable for children of the ' gang ' age, usually from about 8 to 12 years, and that at this age girls should work with girls and boys with boys.

The ' gang ' age is a stage in development the children have to go through and grow out of ; and towards the end of this stage the children should begin to work in mixed groups again, as they usually do before the ' gang ' feelings set in.

After the ' gang ' age the emotional development, and especially the development of the mating instinct, is very rapid. The first signs of this development are often that pupils begin to prefer to work by themselves or in pairs of friends of the same sex, and individual work and working in pairs meet their needs better than group activities.

This too is a stage most pupils must go through, but which they must also grow out of, and we should therefore aim at reintroducing group activities and reawakening the co-operative spirit, especially co-operation between boys and girls, as soon as possible.

If our group activities at this last stage are to hold the interest of our pupils they must provide through creative activity an outlet for the desires which arise from the mating instinct ; activity which the pupils feel is socially useful.

XV : Individual Work and the Heuristic Method

ADVANTAGES OF INDIVIDUAL WORK

Children working individually can take their own time. The slow child is not hurried unduly and the abler pupils are not held back.

The teacher, dealing with children individually, can get to know each child and so can provide for each child's special needs and interests.

Children working on their own learn to think for themselves, and to depend upon themselves. They come to like the feeling of independence and of responsibility for their own development, of doing things rather than having things done for them or done to them.

ASSIGNMENTS

The best known method of organizing individual work in primary and secondary schools is called the 'Dalton Plan'. The basis of this plan is the 'assignment', and it is sometimes called the 'assignment system'.

An assignment is a written or printed scheme outlining a certain amount of work to be done by the pupils.

Each assignment may take about a week, a fortnight, or a month to finish. Sometimes the class is given a complete set of assignments for a whole year, divided up into stages.

Each assignment or stage of an assignment gives

the children so much reading, so much to study and memorize, so much practical and written work to be done.

As the aim is to encourage the children to do as much as they can for themselves, assignments give the children advice about how to do the work, as well as telling them what to do.

Taking an assignment on the mother tongue as an example, we may find that the pupil has to read so many pages of a reader. Difficult words and phrases are explained. Attention is called to useful idioms. Questions are set, some to be answered orally and some in writing, and these questions will have such aims as helping the pupil to make out the meaning of the passage, to think about it, enjoy it, and remember whatever in it may be worth remembering.

A story or composition may be asked for, and advice given on how to set about it.

ORGANIZATION AND RECORDS

When the children are working on their assignments, some perhaps in the main hall of the school, some in the library, some in the workshops or art room or laboratory, the teachers are in their own classrooms ready to help children one by one with their difficulties and answer their questions.

When a child has finished an assignment the teacher hears the oral work and corrects the written work, and the child then corrects any mistakes in the written work, and prepares again any of the oral work with which the teacher was dissatisfied.

Once the teacher is satisfied with the work done on one assignment, or on one stage in an assignment, the pupil goes on to the next.

Each pupil has a progress chart, and the teacher a

Part of a page from a text-book which is built up of individual assignments : *Self-Help Exercises in English.*
by F. G. French (Oxford University Press).

Sequence of tenses (iv) : Past perfect and a perfect tense with *should or would*

(*About things which did not happen in the past*)

125. Study these sentences :

(*a*) If I had gone there, I should have seen the strange animal.
(*but I did not go*)

(*b*) They would have helped me if they had known about my trouble.
(*but they did not know about it*)

Write out these sentences in full so as to make sentences like (*a*) and (*b*) above. Remember that you must write about things which did not happen.

(*a*) If I had gone by aeroplane . . . .
(*b*) They would have killed you if . . . .
(*c*) If you had stayed away from school yesterday . . . .
(*d*) All the sailors would have been drowned if . . . .
(*e*) If that man had given you . . . .
(*f*) The monkey would have broken all the glasses . . . .
(*g*) If the hunter had had more food . . . .
(*h*) You would have earned full marks if . . . .
(*i*) If you had worked harder last year . . . .

126. Negative form.

Study this sentence :

I should not have done it even if he had asked me to

Complete these sentences on the pattern of the model sentence :

(*a*) Even if you had told me to, I . . . .
(*b*) If the explorers had not had so many misfortunes . . .
(*c*) The sailors would not have left the ship if . . . .
(*d*) If you had not made so much noise, the bird . . . .
(*e*) Even if the officer had ordered . . . .
(*f*) The child would not have fallen into the sea . . . .
(*g*) Her father would not have praised her, even if . . . .
(*h*) The poor man would not have died if . . . .
(*i*) If you had never written that letter . . . .

progress sheet. Once an assignment has been passed by the teacher, the fact is recorded on the chart and on the sheet, so that both child and teacher can see at a glance how much of the term's work, or year's work, has been covered, and how still much remains to be done.

ASSIGNMENTS AND CLASS TEACHING

The assignment system is usually combined with a certain amount of class teaching. Two kinds of lesson are useful.

The first is called the 'inspiration lesson' and is in fact a preparation for the work to be done, and aims chiefly at awakening the children's interest in it.

Secondly there is the lesson which deals with mistakes and difficulties which most of the class are found to have in common. When the teacher sees that most of the pupils are having the same trouble, the class is called together and told how to deal with it.

ADDITIONAL ASSIGNMENTS

It is not easy to combine class lessons with assignment working if some children are working on assignment number two when others are working on number five or six.

To overcome this difficulty an assignment may be given out to the whole class once a week or once a fortnight, the amount of work in it being such that even the slowest child can finish it in the period allowed.

The faster workers who finish the assignment before the end of the period allowed for it are given an additional assignment to go on with. They work on this until the end of the period allowed, and then put it away until they have finished the next ordinary assignment.

This makes it possible for the teacher to prepare the

whole class for each ordinary class assignment by means of an ' inspiration ' lesson.

ASSIGNMENTS AND THE TEACHER

The success of the system depends very much upon how carefully the assignments are prepared, and upon how much time the teacher can give to helping the children and answering their questions.

If the class has much over twenty pupils, the teacher will have a good deal of work in preparing assignments and correcting written work out of school hours, because in school all the time will be taken up with helping children with their difficulties.

Headmasters and managers arranging staff and time-tables for ' Dalton ' schools have to keep these points in mind. If teachers are to teach well, they need time for recreation and for private study, and it is not good for them or their pupils if too much of their spare time is spent upon preparing assignments and upon corrections.

ASSIGNMENTS AND THE PUPIL

If the assignment system is properly carried out, with the help of a certain amount of class teaching, it has excellent effects upon the learning and the general working habits of the pupils.

It teaches them to depend upon themselves and gives them far more opportunity for enjoying self-activity than they can ever get in ordinary class lessons. In fact it has been found that pupils, especially girls, working on assignments often become so interested in their work that they do far more than is good for their health, and this is a danger we must guard against.

★ ★ ★ ★ ★

The somewhat alarming name of this method comes from the Greek ; in plain English it means, simply, the ' finding out ' method.

' Heureka ! ' meaning ' I have found out ' was the cry with which a famous Greek scientist startled his household one morning. The reason for his excitement was that, as a result of noticing what happened when he entered his bath, he had made an important scientific discovery.

When pupils collect a number of examples of how some word is used, and from the study of those examples find out a rule in grammar which they then test with the help of further examples, they are using the heuristic method.

The method is used in science when instead of the teacher telling the pupils something they need to know they find it out for themselves by means of observation and experiment.

In history the heuristic method is to find out the truth about the period we are studying, and to build up our own account of it, not from text-books but from the material on which the text-books are based, from the study of the actual words of the men and women, and of the laws and treaties of the period, and from looking at what the people made and used, at the buildings they put up and the pictures they painted.

The heuristic method is to learn direct from the study of people and things, rather than indirectly from the study of what is said or written *about* them.

It is clear from our examples that this method depends chiefly upon induction and deduction, and that the project method, the play way and the assignment system are in the main applications of heuristic principles.

The heuristic is a scientific and logical method of learning, and though it is used in many subjects it was first developed by Professor Armstrong as a method of learning science.

Instead of telling pupils what the great scientists of the past had found out, the teacher encouraged the pupils to 'follow in the footsteps' of the first discoverers, and by doing what they did to find out what they discovered.

The object of the method is not so much to teach facts as to teach how to find out facts and how to build them up into a useful system of knowledge. It teaches pupils to observe carefully, record correctly, and base useful generalizations upon their observations and records.

They learn to think and work like discoverers, inventors, and research students, those who specialize in finding out new knowledge. The aim is not to produce research students, but it is to give every pupil some idea of how a scientist works and what it means to study a subject in a scientific spirit.

They will see, for example, that to believe in witchcraft, and to disbelieve in witchcraft, are attitudes which are equally unscientific, that witchcraft is something on which a scientist would say 'Here is a subject about which there is much talk and little knowledge. We must observe more facts and make more experiments before we can give an opinion.'

The method will help pupils to think for themselves, and to be on their guard against believing all they want to believe, and all that other people want them to believe. They will learn to look for properly supported facts and sound arguments before they accept any statement.

The heuristic method is a method of learning by experience, of learning what men and women have found out about the world in the way they have found it out, by looking at people and things to see what they are like and by doing things to see what will happen.

LIMITS OF THE METHOD

We cannot use the method all the time in all subjects. It is a method for dealing with knowledge rather than with skill or emotion. Moreover there are many things the children need to know which they have not the time, or the books, or the apparatus, or the special knowledge they must have if they are to find those things out for themselves.

All the same, we often tell our pupils too much and allow them to find out too little, forgetting the important rule that we should never do for the children anything they can reasonably be expected to do for themselves.

XVI : Story-telling and Exposition

STORY-TELLING : LEARN TO TELL STORIES

Story-telling is one art and reading aloud is another. Teachers need to learn both. There are several good books on the subject of story-telling and every teacher should read one of these. We are not all born story-tellers but we can all develop our powers of story-telling.

KNOW YOUR STORY

It spoils our pupils' enjoyment of a story if we have to stop in the middle to look in a book to see what happened next, or if we leave something out and then have to go back and say, ' Oh, I forgot to tell you . . . .'

It is not necessary to know our story by heart. Stories should be told, not repeated word for word from memory ; though there may be a sentence here and there which it is worth learning by heart, if the effect of the story depends upon getting the wording of the sentence exactly right.

ENJOY YOUR STORY

However old we may be we all remain children. Good teachers know this and are not ashamed to admit that they still have much of the child about them and still enjoy many childish things.

If we ourselves enjoy the stories we tell, we are likely to make them lively and interesting and our pupils will enjoy them too. If we look down upon them as childish nonsense only fit for babies, our pupils will soon learn to do the same.

REPETITION

The younger children like to hear the key phrases of the story repeated, like the chorus of a song.

They like a mouse which begins everything it says with 'I am only a mouse, but .....' or a travel story each part of which begins with 'And the next day we travelled ..... miles and we came to .....'

If our pupils are interested in the story they will be on the look-out for such repetitions and correct us if we leave them out or get them wrong.

CHILDREN LIKE ACTION IN THEIR STORIES

Children are at first more interested in what things do than in what they are like. It has been found that they like best stories about things which move, such as boys and girls and animals, cars and trains, ships and aeroplanes.

We are certain to interest them if we tell them stories about boys and girls of their own age who do the sort of things they do and the sort of things they would like to do.

MAKE THE STORY LIVE

We must learn to tell stories so that the people in the story seem to live and move in front of our listeners.

In order to do this we must avoid anything which makes the children attend to the way we speak rather than to what we are telling them.

This means we must use words which they understand well, and make conversations easy to follow by giving them in direct speech.

We must speak easily and naturally ; but we should not be afraid to act the parts of the people in the story when this will help us to make these people 'come alive' in the children's minds.

The Story-Teller. Scene in an English Infant school.

Descriptive words for sounds and other happenings are useful. 'The gun went Bang!' is better story-telling than 'The gun went off with a single loud report.'

VISUALIZE THE STORY

To make our story come alive we must visualize it as we tell it.

This means that we must see in our 'mind's eye' what is happening in the story; we must form an image of it and tell the children what we see. Then we form an image of what happened next, and describe that image, and so on.

The clearer the *image* of each happening in the story is in our minds (that is to say, the more clearly we *imagine* it), the more clearly and effectively we shall tell it.

KNOW YOUR AIM

Our story has to be told to children at a certain stage of development and for a certain purpose. We must remember to whom we are telling it and be clear about why we are telling it.

Our first aim must always be to entertain, to please our listeners. If they do not enjoy the story they will get nothing from it.

The stories we tell in class usually have some other purpose as well. We can use them to present knowledge, but stories are even more useful to develop the pupils' emotions and powers of imagination, their powers of forming images of things they have not seen, and of understanding their own thoughts and feelings and those of other people.

Whatever our aim may be, we shall tell a better story if we are quite clear in our minds why we are telling it.

TRUTH AND FICTION

We can change, add to, or take away from, any story to make it fit our purpose, provided that it is ' only a story ' and does not pretend to tell the truth about real people and things that really happened.

When we are telling a true story we must get as near as possible to telling ' the truth, the whole truth, and nothing but the truth'. A very great deal of the trouble in the world to-day is the result of children not being told the truth in such subjects as history and geography. School books have contained many stories which are not true or which give children very misleading, or even completely wrong, ideas about people and events.

We must be careful to see that our children distinguish clearly between stories that are true, or as nearly true as it is possible to make them, stories that are probably true, and stories that are wholly made up, ' pure fiction'.

EMOTION

Charles Dickens said that the art of telling stories lies in making people laugh, making them cry, and making them wait.

We all enjoy a story which makes us laugh; and sympathy with the troubles of others, even if they are only ' people in a story', makes our own troubles seem less important. Most people like ' a good cry ' because it provides an outlet for their feelings of self-pity.

Children will always listen better to a story if we can awaken their curiosity and keep it awake, keep them wondering what is going to happen next in the story.

NEW STORIES FOR OLD

Instead of standing outside the story and telling it as if we were watching something happening, we can pretend to be one of the people in the story and speak as if that person were speaking.

The story of the Good Samaritan, for example, may be re-told from the point of view of the man who was robbed, 'There was I, lying in the ditch .....', or from the point of view of the landlord of the inn.

Re-telling or re-writing stories from the point of view of someone in the story like this makes an excellent exercise for children.

STORIES AND ACTIVITY

When we have told a story, there should be something for the children to do. One such exercise is suggested above.

Young children like to dramatize any story they have enjoyed, and they also like to invent games based upon the story.

When we are choosing and preparing stories for a class we should keep these points in mind, and try to tell stories that will suggest useful activities.

STORY-TELLING AND READING ALOUD

Most small children would rather be told a story than have one read to them ; but many parents and teachers have found that reading aloud, even to very small children, can be in itself an important means of educating them.

In addition to its use in teaching appreciation, reading aloud is useful in language work, especially for children learning a second language, for example African children learning English.

If we can find stories to read that really interest our

pupils, their interest will make them attend carefully in order to get at the meaning of what is being read.

This careful attention helps them to pick up, without noticing that they are doing so, much knowledge of the language, of how phrases and sentences are made up and put together. They get a feeling for the right arrangement of the words and for the ' beat', the time or rhythm of the sentences.

Taking in knowledge unconsciously in this way is called ' unconscious assimilation ' and is an important part of the work of learning a new language.

EXPOSITION

We have already considered at some length the principles and importance of exposition, and it remains only to give a few practical hints on its use in class.

KEEP TO THE POINT

Make sure that the purpose of the lesson is clearly stated, and that everything in the exposition helps to carry out that purpose.

STEP BY STEP

Deal fully with each step or stage in the exposition, and finish with it before passing on to the next.

REVISE

If we revise at the end of each step, we give the slower pupils a better chance to follow the exposition step by step than we do if we revise or summarize only at the end of the lesson.

ILLUSTRATE

Exposition needs plenty of examples and comparisons from the pupils' experience.

The knowledge we present should also be illustrated with the help of the blackboard, of pictures and photographs and models, and, whenever possible, of the actual things we are dealing with.

NO OVERLOADING

Our exposition must not be over-loaded. The commonest mistake is to try to explain too much in one lesson.

A little knowledge, a single point, explained with the help of plenty of examples and other illustrations is far more useful than a number of points explained but not illustrated.

If our pupils, as a result of our exposition lesson, remember one thing that is worth remembering, we have done well.

QUESTIONS

There must be questions. Pupils must have opportunities to ask questions so that the teacher can find out, and deal with, their difficulties and fit the exposition to their needs and interests ; and the teacher must ask questions to make sure that the children have taken in what they have been told.

XVII : The Teacher

Because teaching is a personal relation our success as teachers depends very much upon what sort of persons we are, as shown by how, in general, we behave. We must then develop those sides of our personalities, those qualities, which are most useful in teaching.

LOVE OF CHILDREN

First and above all we must like children. If we do not like them and cannot learn to like them we shall be useless as teachers.

People who do not like children, and find it hard to 'get on' with them, are usually people who are more than usually childish themselves, who have not developed emotionally and grown up properly. If we have difficulty in being friendly with children and in getting on with them, the first step towards a cure is to ask ourselves why this is so.

Love comes from knowledge and understanding. Where there is no knowledge there is no love, and where there is no love there is no knowledge. We never learn much about anything until we become interested in it. The study of our pupils, and the study of child psychology, are the necessary basis of all teaching. One of the most valuable gifts a teacher can have is the gift of being able to remember, or imagine, what it is like to be a child, what people and things look like from a child's point of view. Children do not feel secure, and so do not learn, grow, and develop properly, unless they feel sure that their teachers and

parents understand them, approve of them, and are 'on their side'—in a word, love them.

LOVE OF OUR WORK

Learning to understand children and to like them is the first step towards learning to love teaching.

We must be anxious to learn more about our subjects and the methods of teaching them, to keep ourselves up to date in our subjects and our methods.

Far too many teachers, not always through their own fault, take no interest in the study of the art of teaching once their training is over. This is a pity even from the point of view of the teachers themselves. Happiness in our work is probably the most real and lasting happiness we can know: and to enjoy our work we have to learn to do it well.

Children like a teacher who knows the subject and knows the job. They too like to do their work well, and so they like a teacher who can help them to do it well.

In particular, they like a teacher who always makes clear to them exactly what they have to do, so that they can have the satisfaction of doing it themselves without further help, and of making a good job of it.

Our attitude to work affects that of our pupils. If we are interested only in getting through a lesson as quickly and with as little trouble to ourselves as possible, then the children will feel the same.

If on the other hand we are interested in the subject, and anxious that our children should do well, they will become interested, and they will be anxious to do their best.

This does not mean that we can hope to fill every pupil in every lesson with a great desire for learning; but the general level of interest in the class as a whole

will always depend upon the interest the teacher has in the subject and in teaching. A live teacher makes a live class, and a dead teacher a dead class.

When we are truly interested in our subject and our pupils, there is a feeling of sincerity in our classes. If we believe in what we are doing, and work honestly, our children will believe in their work and put their hearts into it.

This interest in teaching, and in every one of our pupils, is of the greatest importance to our happiness and usefulness as teachers ; it is a practical application of the Christian principles of the love of God and the love of our neighbour.

JUSTICE

As the rain falls upon the just and upon the unjust, so our understanding and approval must be given equally to all our pupils, however troublesome some of them may be.

It is in fact the most difficult and troublesome children who are most in need of our understanding and approval, because bad behaviour in children is in ninety-nine cases out of a hundred caused by the failure of some older person to give them the love and respect they need in order to develop properly.

The children must feel that our attention and approval are divided fairly and evenly among them. They will forgive many faults, but they will never like and trust anyone who, they feel, treats them unjustly.

Injustice kills their feeling of security. It makes them feel they do not know ' where they are ' or what may happen to them next.

It is not easy to be just, and to divide our love and our attention equally between thirty or forty children. Knowledge of children, as well as good intentions

towards them, are necessary. But children soon find out whether we are trying or not, and on the whole, if we do our best, they will accept the will for the deed.

We cannot help liking some children better than others. The best we can do is to face our likes and dislikes and try to understand the causes of them, so that we can control them, and make allowances for them in our actual treatment of our pupils.

TALE-BEARING

As a general rule, tale-bearing is to be discouraged because it is often nothing more than trouble-making called by another name. The tale-bearer is often no more than an unpleasant kind of busybody.

Nine times out of ten when children come to us with tales about other children it is best to tell them to go away and settle the matter among themselves. If we know our pupils and know our job we shall not have much difficulty in telling the difference between the busybody and the child who is reporting to us something serious which needs our attention.

The best way to make tale-bearing unnecessary is to have some sort of self-government among our older pupils with an elected court and officers to hear complaints and judge cases.

ATTENTION TO LITTLE THINGS

Many things which seem of small importance may have a big effect on our pupils.

If we are always neat and tidy in our dress, the children will learn that to look pleasant and attractive is not mere vanity but part of their duty to their neighbour.

Children will copy our manners. If we are polite and considerate in our dealings with them, and in our dealings with other people in front of them, they will

learn politeness and consideration for others.

They copy our handwriting and our way of speaking, so that it is important for a teacher to learn to write a clear and pleasant hand, and to speak in a natural, easy, clear and pleasant voice. We must be careful not to speak too fast, or more loudly than is necessary.

We can save much time and effort by having routine matters like cleaning blackboards and handing in written work carried out without disorder and waste of time, and without the need for new orders and arrangements every day. Attention to such points helps to make the children feel calm and secure in the classroom, and it is good for class discipline.

HUMOUR

A teacher needs a sense of humour. We must be able to laugh at ourselves and with our pupils.

It is useless for us to pretend we know everything, can do everything, and never make mistakes. It is good for our pupils to be able to laugh at us sometimes, and we must learn to laugh with them. If we are too good to be laughed at we are too good to live.

We must be careful about laughing at our pupils. Few children have reached a stage of emotional development at which they can bear being laughed at, especially by grown-up people. For the same reason teachers should avoid all sarcasm and irony in dealing with their pupils.

A classroom without laughter is a very dull place. Laughter in moderation is a help in teaching. It helps to build up friendly relations between pupils and teacher, and given that foundation it can help to make the classroom a happy place where work goes on easily and pleasantly.

XVIII : Judging a Lesson and Rating a Teacher

We should learn to judge our own lessons. Good teachers are always anxious to examine their own work, and to have the opinions of others upon it. They know that unless they do so fairly often they will in time get further and further from those principles of education on which good teaching depends.

Those who supervise teaching also need something to guide them in judging the value of the teaching they have to supervise.

The following list of points will be useful both to teachers who want help in judging their own lessons, and to those who have to supervise teaching. All the points in the list may not have to be considered in examining a single lesson ; but if we examine a number of lessons every point will have to be considered sooner or later.

PREPARATION

Is there a written plan of the lesson ? How is it drawn up ? Is it followed slavishly, or with the necessary freedom ?

AIM

Is the aim of the lesson clear to the teacher and to the pupils ?

Is it a limited aim, which can be carried out in the time allowed for the lesson ?

INTEREST

Is the lesson connected with what the pupils know and do? Does the opening catch their attention? Does the teacher use the pupils' own desires and purposes?

PRESENTATION

Is new knowledge clearly explained? Are there enough examples and other illustrations? Is the material clearly divided into properly connected stages? Is the wording suitable and well understood by the pupils? Does the lesson encourage the pupils to think for themselves? Does the teacher make sure they have taken in what they have been told?

APPLICATION

Is there enough for the pupils to do? Is it suited to their powers and to the aim of the lesson?

METHODS

Are the methods used suited to the pupils and to the aim of the lesson? Are the methods in use employed to the best advantage?

APPARATUS AND MATERIALS

Are all the necessary apparatus and materials ready before the lesson begins? Is good use made of the blackboard? Are there enough pictures, photographs, models and other means of illustration? Does the teacher show the pupils the actual things they are learning about, as far as this is possible? Do the pupils and the teacher collect any materials, and make any apparatus, themselves?

QUESTIONS

Does the teacher ask the right questions? Are they spread evenly over the class? Are pupils encouraged to ask questions? Do they ask useful questions? How does the teacher deal with pupils' questions?

REVISION

Is there enough revision? Is it aimed to help the children understand as well as remember? Is it done at the right time?

CLASS MANAGEMENT

Is the classroom furniture well arranged, so that the pupils can all see the blackboard and see and hear the teacher; and have all a good light on their desks?

Do the desks and seats allow the pupils to sit comfortably in healthy postures? Is the classroom routine carried out without disorder and waste of time? Is there enough movement of air in the classroom, and if not are the pupils taken out of doors for the lesson?

GENERAL EFFECT

Did the lesson carry out the aim stated by the teacher? Did the pupils gain anything in knowledge, skill, or appreciation? Were they interested throughout the lesson, or were they clearly pleased when it ended?

THE TEACHER'S SPEECH

Does the teacher speak clearly and naturally, and neither too loudly nor too quickly? Is the voice flat and dull, or lively and full of change and interest? Do the pupils hear every word?

READING ALOUD

Does the teacher's reading aloud bring out the full meaning and value of the material ? Is the weight put on the right words, and are the words grouped in their proper phrases ? Do the pauses come in the right places ? Does the voice rise and fall in the right places ? Does the reading sound easy, natural, and pleasant ?

STORY-TELLING

Does the teacher show a lively interest in the story and tell it in a lively way ? Could it have been improved by adding to it, or by leaving out part of it ? Is it told in the teacher's own words or repeated from memory ? Does it 'carry the children away', make them forget where they are ?

THE TEACHER'S ATTITUDE TO THE WORK

Is the teacher sleepy and lazy, or smart and lively ? Did the lesson start without waste of time ? Is time wasted during the lesson ? Is the teacher clearly anxious to make the work interesting and to help the children to do it well ?

ATTITUDE TO THE PUPILS

Is the teacher friendly and polite towards the pupils ? Is there laughter in the lesson, without disorder ? Is the teacher too sarcastic or ironical ? Are good work and useful questions properly praised, and faults properly corrected ? Is the general effect of the teacher's attitude to encourage the pupils, make them feel secure, and develop their self-confidence ?

DISCIPLINE

Is the discipline so slack as to cause a waste of time

and effort ? Is it unnecessarily severe ? Are punishments given ? If so what punishments, and how often ? Does discipline depend only upon fear of punishment ? Is there any sort of self-government ? If so, how is it organized ? Is it helpful ? What effect, if any, is the class discipline likely to have upon the behaviour of the children out of school hours ?

★ ★ ★ ★ ★

A SELF-RATING SCHEME FOR TEACHERS

There are many opinions on the qualities that go to make a good teacher, and on which of these qualities are the most important.

It is a useful exercise for a school staff to make its own list of such qualities. Teachers can first suggest qualities and then arrange them in order of importance by first discussing them and then voting upon them.

Such an exercise stimulates much useful thinking, and the list can be used as a guide in rating each teacher's ability.

The qualities chosen for the list should be easy to describe and distinguish. Qualities which are too general and too much a matter of opinion, such as ' refinement', and qualities which are made up of a number of other qualities, such as ' culture', are to be avoided, because they are too difficult to judge.

One school staff produced the following list of qualities and arranged them in this order of importance :—

1. Self-control.
2. Love of the work.
3. Sympathy.
4. Willingness to experiment and to learn from experience.

5. The feeling that teaching is one's proper life-work.
6. A sense of humour.
7. Love of justice and sensitiveness to injustice.
8. Independence of mind.
9. Sincerity.
10. ' Dependableness '.
11. Patience.
12. Ability to find one's own way and means of getting things done.

When the list has been agreed, teachers can rate their own work, and each other's, allowing up to five or seven points for each quality.

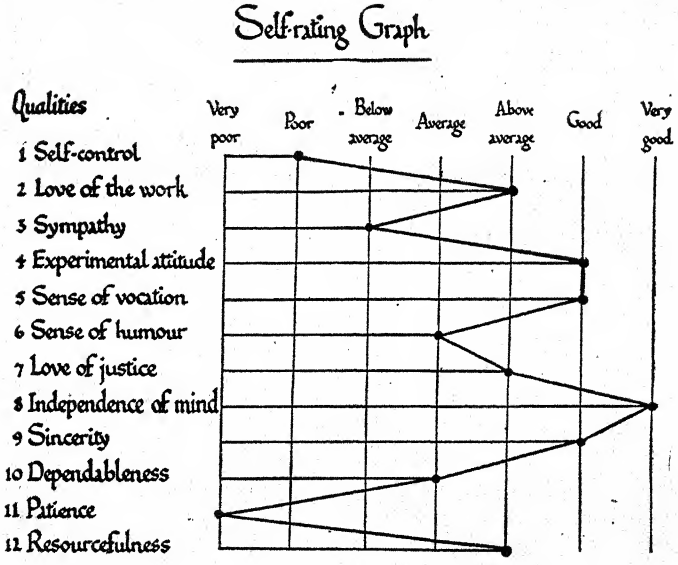
Five Points.	*Seven Points.*
1. Very poor	1. Very poor
2. Poor	2. Poor
3. Average	3. Below average
4. Good	4. Average
5. Very good	5. Above average
	6. Good
	7. Very good

On the whole the smaller number of points is to be preferred. If we try to award teachers up to say ten marks for ' sympathy', what is the difference between three marks and four ?

If the staff is a small one it may be possible to mark them by arranging them in order of merit for each quality. With five teachers, for example, the one considered to have the greatest patience would score five points under quality number eleven in the list above.

The results of the rating are best summarized by means of a graph. Each teacher can plot his or her own graph, and then those of the rest of the staff. This makes it possible for the teachers to compare what they think of themselves with what others think

of them. Here is an example of one graph, describing the qualities listed on the previous page :—



In the interests of peace and goodwill it may be better to have this done in such a way that no one except the teacher who plotted any one graph can tell who did it !

Head teachers find it useful to have such graphs made in this way every year, and to file them so that they can be referred to when necessary.

From time to time teachers have asked their pupils to write compositions, or lists of qualities, with headings

such as 'The kind of teacher I like best.' In this way the teachers have learnt much that was interesting about themselves and their work.

In one such list, made from a very large number of pupils' compositions, it was found that most children considered it very important that their teachers should explain to them very clearly what they had to do, and that teachers should have no favourites and should not shout at their pupils.

Part IV : The Nature of Learning

XIX : Why and How we Learn

We are born with instinctive desires for activity. We want to do things and to make things. We learn in order to become able to do what we want to do and make what we want to make, and so satisfy our instinctive desires.

A boy sees another boy flying a kite. A common expression of our instinctive urges is the desire to do what others do and to have what they have. So the boy wishes to fly a kite of his own.

He has no money to buy a kite, so he has to find out how to make one. He has to get the right tools and materials and learn to use them. When he has made his kite he has to learn to fly it.

All this he will learn partly by making his own attempts and learning from his own mistakes, that is by 'trial and error'. He may learn also by watching others, and getting advice from them or from books.

A girl wants a certain job. To get it she must pass an examination, and to pass it she must know some algebra. So she learns some algebra.

A class does not want to learn to read and write. The pupils can see no use in it ; but the teacher says, 'If you do not learn to spell these words by Friday, you will lose your Saturday holiday.' So they learn to spell the words.

THE BETTER THE REASON, THE BETTER THE LEARNING

Of the children in our example above, the boy with

the kite will learn the best, and learn most easily, because everything he has to do is directly connected with a purpose of his own. He does nothing without what seems to him a good reason.

The girl will learn less well and less easily. She does not want to learn algebra and can see no reason for learning it except that it is part of an examination she must pass in order to get what she wants.

Learning algebra is for her only a 'necessary evil'. But if she knows that algebra will be of some real use to her in her job, she has a better reason for learning it and will learn it more easily. If she is anxious, in addition, to be able to do her job really well, and not only to earn money, then she will learn better still.

The pupils in the class will learn the least, and have the greatest trouble in learning it. The learning has no connexion with any purpose of their own except the purpose of avoiding punishment.

The more directly what we learn is connected with doing what we want to do, the better and the more easily we learn it.

HOW WE LEARN

Learning is a response to a stimulus, a reaction to a situation. One way of learning is to make a number of responses to a single stimulus, and to choose the responses we find most useful for our purpose.

We may learn only by trial and error, that is to say by trying one response after another until we happen to hit upon one that gives the result we desire. Babies learn in this way.

Or we may make a response, and if it is not satisfactory we may examine it, to find out what was wrong with it and how it could be improved. Then we may

make a second response, avoiding the mistakes we made in the first.

At an even more advanced stage, we may study the situation, think out all the possible responses without actually making them, and decide which is most likely to give the result we want. In this way we may hit upon the right response in the very first trial, or with very few trials.

When we have found the response we need, we take steps to master it, usually by repeating it a number of times for practice, until it becomes easy and natural to us.

Learning is a matter of selecting the right response and practising it.

A girl wants to read a sentence. She comes to a word she has not seen before. She tries to pronounce the spelling in several ways, until she finds one that makes a familiar word. If this fits into the sentence and makes the meaning clear, it is almost certainly the right word.

So she says it over once or twice, looking at the spelling, so that she will know it next time she see it.

She has tried several responses, selected the one which best suited her purpose, and practised it.

A boy has a clock that goes too fast. So he moves the regulating lever at the back of the clock towards 'S' to make it go slower.

He has not done this before, and so he has no idea how far to move the lever. He moves it too far, the clock goes too slowly, and next day he is late for school.

So he puts the lever back towards F, but again he moves it a little too far and the clock goes too fast. He keeps on moving the lever first back and then forward until at last he gets it in the right place, where it makes the clock keep good time.

When he comes to regulate a friend's clock for him, he knows how to set about it. He moves the lever only a very very little at a time, and soon hits on the right position.

The stimulus in this case was the boy's desire to make his clock keep good time. His response was to move the regulator, and after some practice he mastered the knowledge and skill needed to regulate a clock.

HABITUAL RESPONSES

In actions controlled by habit, learning leads us always to make one particular response to a given stimulus, so that we make the response whenever we meet the stimulus, without any conscious attention to what we do.

For example, once we know our multiplication tables, the stimulus 7×9 produces the response 63, and always produces that response and no other, without our having to stop and think at all.

When we are very young we have to learn to put on our clothes ; we have to think which article of clothing to put on first, which way round it goes, how to do it up and so on.

After a while, dressing becomes a matter of habit, and we may get up in the morning and wash and dress and yet be thinking of something else the whole time.

The very first response a child makes to any stimulus may affect all later responses. When we are building up habits it is the earliest responses that are the most important : if these are wrong, all later responses to the same stimulus are likely to be wrong or uncertain.

This is why, for example, we no longer use dictation to *teach* spelling but only to revise it, and why we do not allow pupils to correct one another's dictations, or

to be set the sort of exercise in which they are given words containing spelling mistakes and told to correct them.

It has been found that if children spell a word wrongly the first time they spell it, they are likely to go on doing so.

It has also been found that if children see a word spelt wrongly before the right spelling has become a firm habit, they are likely to become confused, and from then on to be uncertain how to spell the word.

IMITATION AND PLAY

Our instinctive urges cause us to enjoy doing what others do, saying what they say, and so on. Sometimes we do this unconsciously, and sometimes consciously, ' on purpose'.

If we stand watching someone doing the high jump, we find ourselves lifting one leg in sympathy, and in imitation of the movement made by the jumper, without any conscious desire or effort on our part to do so. On the other hand children often make conscious attempts to speak or write, walk or dress, in imitation of their teacher.

Imitation plays an important part in learning skills and habits. We can learn much about the value and importance of learning by imitation, and of learning through play, by watching animals, for example a cat with its kittens.

Imitation and play are ' natural ' ways of learning, the ways in which children learn simple skills and habits most easily and most quickly.

PRAGMATIC AND ACADEMIC LEARNING

Most of the examples given in this chapter have been examples of ' pragmatic ' learning, that is to say

the kind of learning which is concerned with getting the knowledge and skill we require in order to carry out some practical job like regulating a clock or making a kite.

We shall discuss later what is called ' academic ' learning, the sort of learning which takes up much of our time in schools and colleges, in ' academies'.

This kind of learning is concerned more with induction and deduction, with observing people and things, arranging them in various kinds or classes, discovering general rules which may be applied to each class, and testing those rules by making practical applications of them.

This ' academic ' learning is still a matter of stimulus, response, and practice. In induction, for example, we want to find a rule or principle which will guide us in doing something we want to do.

Our stimulus is a number of examples or other observations, and our response is the rule or principle we base upon them. We than have to test our rule by making use of it in trying to do what we want to do, that is to say by practice.

XX : Ways of Learning

I. SKILL

We may distinguish six stages in the work of learning a skill : stimulation, selection of response, response, reconsideration of response, practice, and habit.

STIMULATION

The situation in which the children find themselves awakens a desire to act in some particular way.

For example, the situation may be that they are setting up a shop and want to make some notices and price cards. Their creative urge is awakened.

Without something of this sort to connect the work with the pupil's own purposes, learning a skill is hard going both for teacher and pupil.

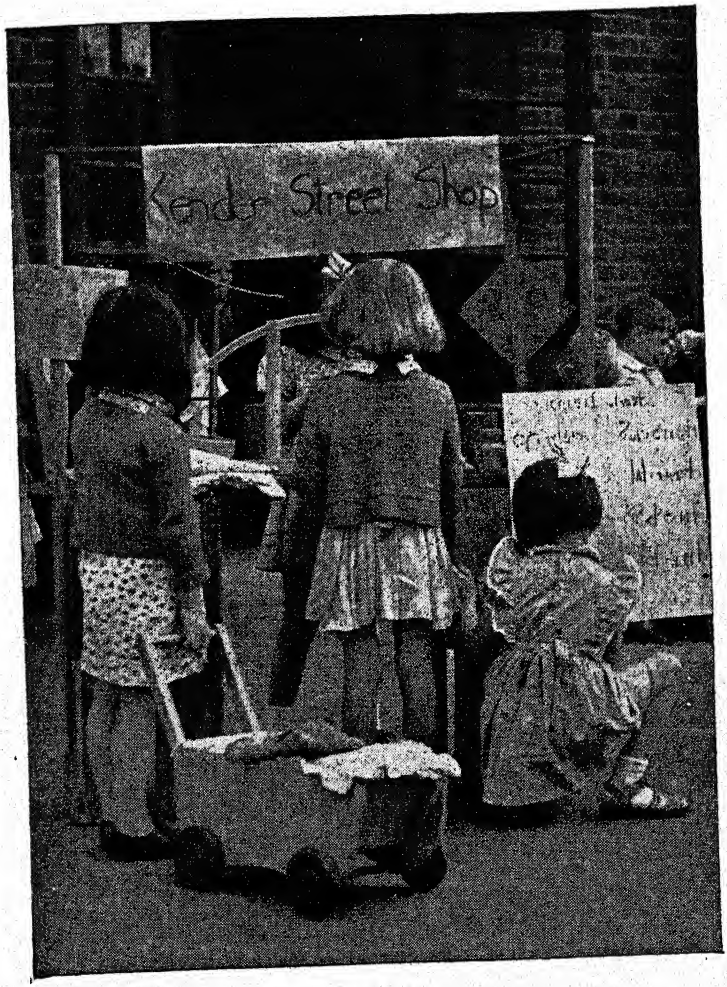
SELECTION OF RESPONSE

With the teacher's help the children decide what materials to use for making the cards and for writing on them, what lettering and figures to take as models, and so on.

These decisions form the first part of their response to the situation.

RESPONSE

The response is not complete until it is put into action. The children get their materials, and start cutting out the cards and writing them.



A Children's Shop. A scene in a London Infants' school. The pupils made the cards. A scale made from an old coathanger is used for weighing fruit.

RECONSIDERATION OF RESPONSE

When they have made a few cards, they have a look at them, put them up in their shop and consider the result.

They may decide that the cards are too small or too big, too thin, or too rough. The ink may be too pale, or the wrong colour. The lettering may not be bold enough.

Putting their response into action enables them to see whether it produces the results they desire. If it does not they must alter it or select a new response.

PRACTICE

Once the children are satisfied with the result of their response, have found satisfactory materials and ways of using them, they need practice.

The first cards they make will probably be rather untidy and badly finished, not good enough to use.

So they make some more, and as they go on practising they learn to make them better, until they can make a set that is worthy of being put up in their shop.

HABIT

By the time they have made a complete set of satisfactory cards, the use of the materials and the formation of the kind of letters and figures chosen has become habitual. When they are making a card they have need to attend only to what they are doing, and they do not have to think about how to do it.

It may be that the habits they have formed are not all good. If this is so their skill in the work will never develop beyond a certain level.

They may for example have got into the habit of forming one or two of the letters wrongly, so that

whenever they have to make those particular letters they either form them wrongly, or, in their effort to correct the wrong habit, form them in an irregular and uncertain manner.

We must always watch most carefully when children are, by means of practice, developing a response into a habit, so that we can make sure that a wrong response is not allowed to develop into a bad habit. In some cases we must take steps to see that wrong responses are avoided altogether, as we have noticed in connexion with spelling.

The practice by which habits are developed causes actual changes in our bodies, changes in the nerve centres which control our muscles, and in the muscles themselves.

These changes take some time to make, and it takes a very much longer time to remove the effects of them. It is like writing in ink : however hard we try to rub out what we have written, it always leaves some mark.

II. KNOWLEDGE

In the process of learning, in the sense of mastering new knowledge, we may distinguish five stages : sensation, perception, association, generalization, and application.

SENSATION

Our first knowledge of the world comes from the way in which objects about us affect our senses. The baby first knows Mother by her smell, by the touch, and by the taste of her milk, and later by the sound of her voice and the sight of her face. Knowledge we gain in this way we call sensation.

This first step is in some ways the most important, because all the later stages depend upon it. If we make a mistake in our first-hand observations of people and things, then all the ideas about them which we base upon those observations will be false.

It is therefore necessary to train our pupils' senses. Too many schools, especially secondary schools, train children only to read and to listen, and leave the other uses of eye and ear, and all the uses of taste and smell and touch, entirely untrained.

All true knowledge is based upon observing people and things, and finding out, with the help of our senses, what they are like and how they behave.

From these observations we build up our ideas and principles ; but unless we are continually returning to our senses and what we learn from our senses, our ideas and principles, as time goes on, will get further and further away from the truth.

PERCEPTION

We see, hear, feel, touch or smell something new. Our first question is, ' What is it ? ' and our first step towards answering is to think what it is like, what it reminds us of. This is the stage called perception.

In some parts of Africa, when ground white sugar was first imported from Europe, the people found by means of sight and touch that it was a white powder. It reminded them of salt.

Tasting it told them it was not salt ; so they called it ' white man's salt', to distinguish it from real salt.

In the same way the people's first sight of railway coaches and wagons reminded them of canoes full of people and goods, so they named the train the ' canoe of the land'.

ASSOCIATION

Association carries further the work of perception.

Sensation tells us, 'This is a white powder with a sweet taste.' Perception tells us, 'The look and feel of it reminds us of salt, but the taste reminds us of sugar cane.'

Association is the work of adding these facts to the rest of our knowledge, and connecting them with it. Ground white sugar becomes connected in our minds with the Europeans, who first brought it into West Africa from the sea; with salt, because it looks like salt; with sugar cane, because it tastes like sugar cane and is often made from it; with food; with the market and with overseas trade; with tea and milk. If we look up the word 'sugar' in the dictionary, we find it is an Arabic word, and we connect it with the Arabs who first took sugar to Europe in the Middle Ages.

Association fixes the new knowledge in our memories. It helps us to build up a body of connected knowledge, stored in our minds in such a way that we can bring out the parts of it we need whenever we need them.

GENERALIZATION

This is the stage at which we form general ideas, rules, and principles. It follows on from perception, and goes on at the same time as association; in fact it is not always easy to distinguish association from generalization.

People who use salt, and who by means of sensation and perception have come to know ground white sugar, can make the generalization that salt and sugar both belong to the class of white things, and that of powders.

Further sensations and perceptions will enable us to make the further generalizations that both salt and

sugar belong to the class of things we eat ; to the class of things we eat in small quantities at a time, and not by themselves but with other foods ; to the class of things that disappear when we put them into water.

When we know that they belong to the class of things which dissolve in water, we can make a generalization in the form of a rule : they are things which must be stored in a dry place.

APPLICATION

Lastly we make use of the knowledge gained by the first four stages. We correct and complete our generalizations by making practical applications of them.

In the case of white sugar, for example, we may apply the generalization that white sugar, like salt, is eaten in small quantities, with other foods.

If we have never used white sugar before, we shall learn a good deal more about it from using it. We shall find our generalization is too simple, and needs to be made clearer and more complete.

It says ' sugar, like salt', so we shall naturally start putting sugar with the foods with which we usually put salt. But we shall soon learn that sugar spoils the taste of such foods, and is usually eaten with those foods with which we do not eat salt : that in fact it is almost the ' opposite ' of salt.

The generalization says ' in small quantities ' : but we shall need some practice, some experience in the uses of sugar, before we know how much sugar to put with this or that food to get the best taste. ' Like salt ' is again misleading here, because we shall probably need far more sugar to make a plate of food sweet enough than we shall need salt to make a plate of food salt enough.

XXI : Conditions which Affect Learning

INHERITANCE

Children differ from the time of their birth, both in their powers of body and mind and in the strength of their various instinctive urges.

These characteristics which they inherit through their parents cannot be changed, but they can be developed by use and training.

Children born with strong intelligence will profit more from experience, see the relations and connexions between things more easily, and so learn more than children whose natural intelligence is weaker.

Those born with one kind of instinctive make-up will find one kind of subject interesting, those with a different make-up will be interested in other subjects.

Children may be born with special abilities in certain directions. For example it is thought that ability in music is often inherited, and it is often found together with ability in mathematics.

These inborn characteristics all have their effect on how much and how quickly a child learns, and how easy and interesting he will find any particular subject.

THE BODY

Bodily weakness, long-standing disease, bad feeding, over-tiredness and poor health generally will affect the children's power of learning.

The conditions under which children live and work both at school and at home may help or hinder

learning, and the general health and the living and working conditions of their teachers will affect the teaching and the teacher-pupil relationship, and therefore the learning of the pupils.

STIMULATION

We have already considered, from a teaching point of view, the important part played in education by interest and inspiration.

Children grow as a result of activity of body and mind. Their activities are stimulated by the people and things around them, by their environment.

A school should be an environment specially created to stimulate suitable activities. Children learn as a result of the demands this environment makes upon them, as a result of the interests, the means of satisfying instinctive desires, which the school provides.

THE GOAL SET BEFORE THE PUPILS

In all their work the children should have a goal before them, a standard they are expected to reach. This applies both in knowledge and in skill.

For small children the goal should not be too far off, the standard should be one they will quickly reach. Once they have reached it, we set another before them.

All children need the feeling that they are ' getting somewhere', moving towards their goal. They must be given opportunities to test their progress. This is one reason why tests and examinations, marks and progress charts are useful in encouraging them to learn.

A. Pinsent (*The Principles of Teaching Method*) points out that when children are learning something new we may encourage them by giving them high marks, marks which are, in fact, higher than they 'deserve'. As they master the new skill or knowledge,

and gain self-confidence in the use of it, we can and should, mark more strictly.

Pinsent reports the following experiment. Some students had learned a new process, and thought they were performing it as well as they possibly could.

Although they did not know it, they were in fact making no efforts to improve because they believed that no further improvement was possible.

The next time they did some written work on the process, their tutor gave every student a higher mark than usual, as if there had been some improvement in their work ; though in fact their papers showed no improvement on what they had done before.

These higher marks gave the students the idea that they were still improving, and so stimulated their efforts that the next set of papers they sent in showed a very considerable improvement in their mastery of the process.

This suggests that, when we give marks, we should always consider not only the quality of the work, but the effect the marks we give are likely to have upon each pupil's efforts to learn. It suggests also that we should be careful not to allow pupils to become satisfied that their work is good enough, and that it is not possible, or necessary, to improve it. Children need self-confidence ; but we must be careful that in our efforts to build up their self-confidence we do not allow them to get into a state of self-satisfaction that makes further effort seem to them unnecessary.

ASSOCIATION (see also Chapter XXIII)

An important rule of learning is to put together those things we want to go together.

When we tell the children something new we should help them to connect it, associate it, with as many

things as possible that are already known to them.

These associations should be interesting to the children. They will be interesting if they help the children to understand the new knowledge, to remember it, and to fit it into the right place in their whole knowledge of people and things.

To take a simple example, children will learn $4 \times 7 = 28$ better if we associate it with the fourth day market so common in Africa, with the seven-day week, and with the twenty-eight days from one full moon to the next, and lead them to see that the twenty-eight days represent seven four-day or market weeks, and four seven-day or ' bible ' weeks.

Association should not be too far-fetched : to tell children the seven wonders of the world will not help them much in learning the seven times table.

Associations are often best discovered through activity. This is the advantage of the Project Method. When children use knowledge, they are continually making useful associations. Measuring up pieces of wood to make a table, for example, will associate ' 12 inches make one foot ' with the height, breadth, and length of a table and its parts, and help the children to understand and remember more about feet and inches than they ever will from learning their tables of measurement, and being told about them, in the classroom.

GUIDANCE

Children's learning will be very much affected by the guidance they get, by whether it is good or bad and by whether they get too much of it or too little.

They need help in selecting the most useful response, in putting the chosen response into action, and in practising the response.

We have already noticed the importance of guidance

in connexion with the early responses we make in learning some habit or simple skill.

As children, especially young children, learn many things best by means of imitation, what the teacher *does* in the classroom is a most important kind of guidance. Our methods of doing the things we want the children to do, our skill in doing them, will have great effects on the methods and skill of our pupils.

For example, the speech, the reading aloud, and the handwriting of teachers who are teaching young children to read and write are of the greatest importance to the children's learning.

EMOTION

Fear, feelings of insecurity, and doubts of our ability to do what is expected make learning more difficult. We cannot pay too much attention to the child's need for security and self-confidence.

The emotional state of children is easily affected by the attitude towards them of people older than themselves. The feelings we have for Mother or Father when we are very young are later transferred to the teacher : when the teacher is angry with us, for example, it affects us as if Father or Mother were angry.

Praise, as we have pointed out, does far more to stimulate useful activity than blame or punishment, because praise helps to develop self-confidence and a feeling of security while blame and punishment are more likely to break them down.

On the whole, telling children they are good helps to make them good, and telling them they are bad helps to make them bad ; but here again we must remember that it is self-confidence resulting in activity, not self-satisfaction resulting in inactivity, which we must seek to develop.

THE TOTAL SITUATION

Learning is the result of the total situation in which the children live and learn, of all the conditions, taken together, which affect learning.

We have considered these conditions separately, but they do not act separately upon the child. What is important is the whole situation, the children's inborn ability, bodily health, home and school environment, the extent to which their work enables them to carry out their own purposes and satisfy their desires, the encouragement and guidance they receive, their emotional state, in fact their whole experience of life, past and present.

It is most important that the total situation of the children in the school should be as closely connected as possible with their total situation outside the school, with their everyday lives and with the life of the community in general.

Arithmetic should help them to deal with the number problems they meet in the home and the market. History should help them to understand what is happening in their town and village, and in the world outside, to-day. Health lessons should help them to keep themselves, their homes, and their town clean and healthy. Language teaching should help them to carry into their homes, to their own people, the useful knowledge they have gained in school. *What children cannot explain to their mothers and fathers, even though their parents are illiterate, they have not properly learned.*

The learning situation should not be something shut up within the four walls of the classroom. It should be a part of the whole world of living, and all learning should be learning how to live. The proper aim of all learning is the good life for one and for all.

Part V : The Laws of Learning

XXII : Readiness, Maturation, Purpose, Practice and Recency

As we study how children and grown-up people learn, we see that they follow certain laws or principles of learning.

We do not follow all these laws in all our learning ; but they give us some idea of what usually happens, and if we pay attention to them they will enable us to learn, and to help our pupils to learn, more quickly, easily, thoroughly, and with more enjoyment.

READINESS

We learn best when we are ready to learn. We need a suitable stimulus if learning is to follow easily and naturally.

When a suitable stimulus has made us ready to act, then action brings satisfaction. Being forced to act when no stimulus to self-activity is present causes dissatisfaction.

Education in the past was based upon command and obedience. Children learned to do what they were told, whether they liked it or not. There is, it is true, a certain instinctive satisfaction in obedience ; children do, under certain conditions, like being made to do what older people think good for them.

Modern education however is based rather upon the willing co-operation of the children, because it has been proved that we learn better when we are doing what we want to do because we are interested in the

work itself, than when we are doing what we are told to do only because we are told to do it. Doing what we want to do provides the more direct satisfaction of out instinctive desires, and makes more direct use of the force of those desires. The wider importance of this principle is that willing co-operation is the foundation of all true democracy.

Young children are always ready to play. We tell them in class, 'We will play a game.' This stimulates their readiness for action : they want to begin the game at once.

In order to play the game they need certain materials. Sticks must be cut, or words written on cards. Because they are eager to get the game started, they find out how to do, and do, all that has to be done eagerly and quickly.

'Mind-set' is a general term sometimes used in discussing this law of readiness. It is a wider and more general term than readiness.

Children for example may set their minds upon learning to play football. That is their general purpose, or mind-set.

To carry out that purpose, they will be ready to learn the rules of the game, the necessary skills and so on. A mind-set results in readiness to carry out the various jobs necessary to enable us to do what we have set our minds upon doing.

We may have a mind-set to pass a certain examination ; this will result in a readiness to learn the subjects we have to learn in order to pass.

MATURATION

Mature means ripe. We must wait till fruit has reached the proper degree of ripeness before we eat it, and we must wait until children have reached the

right stage of development for learning a given kind of skill, knowledge, or thinking process before we try to teach it to them.

This is a special case of the law of readiness. If we want children to learn something easily and quickly, we must choose the time when they are most ready to learn it.

Psychologists are still studying the way in which we grow up and mature, and trying to find out the best times for teaching us to learn to read, to write, to reason, and so on.

Their studies suggest that, for example, from 18 months to four years old the development of the mind is more important than that of the body ; from four to seven years our bodies grow a great deal, but our minds develop more slowly.

From seven to eleven there is another period of mind development, followed from eleven to fourteen by the important period of bodily development called 'adolescence'. From fourteen to eighteen the mind again develops very quickly.

These periods of development vary a good deal from child to child : some mature earlier and some later.

We know for certain from the study of babies that if we try to teach them something they are not ready to learn, or if we fail to teach it them when they are ready, their development will be slower and less complete than it should be.

We do as much harm by trying to make babies learn to walk before they are ready as we do by not giving them proper opportunities to learn when they are ready.

When children are ready to learn to talk, they learn a very large number of words in a very short time.

They become deeply interested in words, and learn them more quickly and easily than at any other time in their lives. But if we try to make them talk before they are ready; or do not give them enough opportunities and enough encouragement and help, when they are ready to listen and to speak; we may seriously hinder the proper development of their powers of thought and expression.

Young children under twelve or thirteen years old are very interested first in what things do and later in what they are like. They are natural artists, and can learn for example to paint better pictures than most of them can ever paint when they are older. They are however little interested in how and why, in cause and effect.

From thirteen or fourteen onwards, most children lose a good deal of their artistic ability, unless it is above average and receives special encouragement, but they are far more interested than before in how and why, in cause and effect.

At this period also, they are often especially interested in religion and politics, that is to say in their relationship to God and to their fellow men and women. If we do not develop the young child's interest in art, and the teen-age child's interest in religion, politics and civics, at the time when these interests are strongest, they will find it very much more difficult to develop such interests later on.

We have mentioned already the way in which boys and girls like to form separate small groups during the 'gang' age, how the gangs later, towards the fourteenth year, are likely to break up into pairs or single individuals, and how boys and girls begin to move together again in their later teens.

In Denmark there is a system of 'Folk Schools'

for the further education of people who have left the ordinary schools and are earning their own living.

In these Folk Schools it has been found that grown-up people who are eager to learn, and have practical experience of the subjects studied, can learn in three to five months as much of certain subjects as ordinary secondary school pupils learn in three to five years. This suggests that teaching those subjects in the secondary schools was wasting a great deal of time, and that in teaching them we have been disregarding the law of maturation.

The study of maturation, of how and when our different powers of mind and body, and our various instinctive desires, ripen and develop, is a study we must all undertake.

As so little is known about it we must learn as much as we can for our own experience, from our memories of our own childhood and education, and from observing our pupils both at work and at play.

We must be constantly on the look-out for the growth of new interests in our pupils, and for the fading away of the old ones, and do all we can to adjust the surroundings and suit the activities of the children to the stage of maturation that they have reached.

PURPOSE

We have already pointed out the value and importance to our pupils of having a clearly stated purpose in all that they do, and of making use of their own purposes, and of the instinctive urges behind those purposes.

The law of purpose states that the stronger our desire, the more fixed our determination, the firmer our purpose to do something, the greater will be our readiness to do anything and everything that will help

us to carry out that purpose, and the greater our *unreadiness* to learn anything not connected with that purpose.

This law helps us to see two reasons why the Project system helps learning. First, the pupils have before them a clear and not too distant goal, a purpose to carry out that has behind it their own instinctive interests and desires.

Secondly, by centring several activities upon a single purpose, we make sure of the pupils' readiness to undertake *all* those activities, even though some of them are activities the children would not be ready to undertake for their own sake.

In this way we can avoid, for example, the not uncommon state of affairs in which the pupils' very strong purpose to pass some particular examination results in a complete unreadiness to learn anything which is not, in their opinion, likely to help them to pass that examination.

PRACTICE

The law of practice states that we strengthen the connexion between stimulus and response by means of practice.

When we have found the correct response to a given stimulus, we repeat the response until it becomes easy and natural for us to make that response whenever we meet the same stimulus.

When we carry out a response, whether that response is a thought or a bodily movement, we cause changes to take place in our bodies, in the arrangement and working of our nervous systems.

These changes make it easier to act in the same way, to make the same responses, next time we meet the same stimulus; or as we say 'practice makes perfect'.

We all know this, but we do not always pay enough attention to it.

Far too often we proceed from the presentation of a skill or a process to its practical application in a difficult situation, without nearly enough practice to enable us to carry it out easily, quickly, and correctly, to give us self-confidence and certainty in our handling of it.

For example, children too often learn a new process in arithmetic, and apply it to complex problems before they have had enough practice in applying it to simple problems to enable them to use it with skill and certainty.

The same sort of mistake is very common in language teaching, and we shall do well to remember the rule that children must learn not only *how* to do this or that ; they must learn also to do it easily and to do it correctly. Until they can ' do it quickly and get it right ' they have not learnt it.

There are two other very important points about practice which we must remember.

First, practice should not go on for too long at a time. The best rule for practice is ' little and often'. Practice should stop when improvement stops.

It is partly for this reason that in schools we do not have arithmetic one week, language the next and general knowledge the week after, but learn a little of each subject every day, or at least every week.

For this reason also it is often useful to give a few minutes in every lesson in a subject to the revision and practice of the memory-work which has been done in that subject.

Second, as we have already pointed out, practice alone, in all but the simplest skills and habits, does not make perfect : each short period of practice must be

followed by a period of reconsideration and correction. We must stop to make sure that we are, in fact, improving as a result of our practice, and if we are not improving we must find out the reason, and correct the mistake which is preventing further improvement.

RECENCY

The law of recency says that if two experiences are in themselves equally easy to remember, we shall find it easier to remember the one that happened second than the one that happened first.

This is another way of stating the law of disuse, which states if we do not use what we learn, we are likely to forget it.

Until our knowledge becomes habitual, becomes a part of ourselves, we must have *regular* and *frequent* opportunities to revise it, so that it remains recent.

This is another reason why we do a little of each of several subjects every day, instead of doing the same subject all day long.

XXIII : Satisfaction, Selection, Association, and Multiple Learning

SATISFACTION

The law of satisfaction states that we learn to do those things which give us satisfaction, and we do not learn to do things which cause us annoyance.

The connexion between stimulus and response becomes stronger when the response gives us satisfaction, but becomes weaker when the response causes annoyance. We learn from ' practice with satisfaction '.

This explains why the mistakes we make when we are learning, provided that they cause us annoyance, do not become habitual, even if we repeat them a number of times.

For example, when we first try to kick a football we often miss it, or miss-kick it ; but when we do so, the ball does not move as we want it to move. We get no satisfaction, no pleasure from our misses and our miss-kicks, so that although we repeat them a good many times, the law of practice does not apply and we do not *learn* to miss. No connexion between stimulus and response, between the ball and the miss, is built up.

In school however we have the difficulty that the mistakes children make in their responses will not always cause them annoyance in the same direct manner that missing a ball when we try to kick it causes us annoyance.

We must therefore watch children carefully when they are learning, and by such means as praise or

marks, cause them to feel satisfaction when they make correct responses.

We must also, by pointing out every mistake and having it properly corrected, cause them to feel annoyance when they make an incorrect response.

Children of course learn better if they see their own mistakes, and feel satisfaction at a correct response, and dissatisfaction at an incorrect response, naturally, as they do when they are learning to kick a ball.

The Project Method helps us to bring this about. When the children are interested in carrying out a purpose, anything which helps to carry out that purpose will naturally give them satisfaction, and anything which hinders them in carrying it out will cause them annoyance, without interference from the teacher.

The law of satisfaction must not be taken to mean that children cannot, or should not, do anything that causes trouble or difficulty. As we have pointed out, if the children have a purpose they will readily undergo a good deal of trouble and difficulty, undertake considerable amounts of dull and heavy work, provided that their purpose is firm enough and that they can see that the work is really necessary in order to carry out their purpose.

They also get instinctive satisfaction from overcoming difficulties and successfully carrying out a troublesome job, just as grown-up people get satisfaction from climbing to the top of a high mountain.

SELECTION

The law of selection follows from the law of satisfaction, and states that we try to select the response which will give us most satisfaction, and we test our selection by the satisfaction we get from it.

We want to tie up a parcel. So we try to select a

length of string which will go round the parcel and leave us enough over to tie the knot.

If our selection is correct we feel satisfaction : it helps us to carry out our purpose, to tie the parcel. If the length we select is too short, we shall feel annoyance : we have wasted our time and possibly our string. If it is too long we shall also feel annoyance, because again string is wasted, and the extra length gets in our way when we are trying to tie up the parcel and so wastes our time as well.

While it is good for children to learn to do things for themselves, to select the responses they think most likely to give them the satisfaction of carrying out their purposes without waste of material time and effort, we must remember that children have much to learn and that materials cost money.

It is often necessary therefore to give our pupils some help and guidance in selecting the response they need in order to carry out their purpose. We must try and find a middle way between too much guidance and too little.

ASSOCIATION

As we learn, every new idea becomes connected in various ways with other ideas already in our minds. As a result of this ' association of ideas,' whatever we happen to think of will call to mind other ideas with which it has been connected.

We think of a tree. That calls up the idea of birds. We associate birds with flight, flight with aeroplanes, aeroplanes with air-mail, and we wonder if we shall have a letter tomorrow.

Association then is an example of stimulus and response. The stimulus ' tree ' produces the response ' bird ', and the stimulus ' bird ' the response ' flight ',

and so on. The law of practice and the law of satisfaction will therefore apply to association.

We naturally associate things or events which we experience together, pens with ink, bicycles with roads, night with sleep.

The more often we meet any two things together, the more closely we associate them, the stronger the association ; and things which are always together, like pen and ink, will be more closely associated than things which we meet sometimes together and sometimes separately. All this accords with the law of practice.

When we meet a stimulus we select the response which gives us most satisfaction. For this reason we shall naturally associate things we meet with things in which we are interested, things which give us pleasure, and we shall not so easily associate them with things which cause us annoyance, displeasure.

When we smell food we shall be more likely to think of eating than of the work of washing dishes or peeling vegetables.

The associations we have considered above we may call natural associations. There is however another kind of association altogether.

For example, when we think of a town we should naturally think of streets and houses, of the people we know who live there, and so on.

But suppose we go for a holiday to the town of A. While we are there we have nothing but trouble. It rains every day. We get fever. We go shopping, and lose a purse with money in it. The people we stay with do not treat us kindly.

The idea of that town becomes associated in our minds with trouble and unhappiness. We react to the stimulus, the thought of the town of A, with the

response, a feeling of annoyance. This is clearly a special kind of association, caused not by the town of A itself, but by what happened to us when we stayed at A.

This special response will cause a number of other special responses. Suppose in the middle of A we notice a big town clock. Sometime afterwards we visit the town of B, and we see a big town clock rather like the one at A. At once we get a feeling of annoyance or displeasure, for no reason that we can at first understand.

What has happened ? The thought of the town of A causes the response annoyance. The thought of a town clock is connected in our minds with the thought of A. So the thought of a town clock causes annoyance.

Now it is hardly usual or natural to be annoyed by a town clock ; here again it is clear that we have a special kind of response.

Our experience in A will affect our associations in another way. When we think of holidays, and of town clocks, we should naturally think of A, where we passed a holiday and noticed a town clock. But as a result of our experiences in A, we shall probably think of our visit to B, and the town clock there, and forget about A and its clock altogether, because to think of A, or of anything which reminds us of A, causes us annoyance.

A proper understanding of these facts about association will have important effects on our teaching.

For example, those things we wish children to remember together we shall make them put together often, and we shall not allow them to meet one without the other.

Most African languages, like Latin, have no articles. We can speak of ' book ' or ' girl ' where in

English we must say ' a book ' or ' the girl '.

When African children are beginning English therefore we shall never speak or write, or allow them to speak or write, such words without an article or demonstrative adjective before them. We shall allow ' a girl', ' this girl', ' your girl', but never ' girl ' alone.

We shall try to centre as much of our work as possible upon some project or purpose in which the children are really interested, so that as much as possible of what they learn is associated with something interesting to them, and is therefore easier for them to remember than it would be if associated only with things in which they take little interest or with things that cause them annoyance or displeasure.

We shall in fact do our best to make their whole environment in the school satisfactory to the children.

In the past, many men and women have learned little after leaving school, because books and study were associated in their minds with schooling, and schooling was associated with ugly buildings, dark uncomfortable rooms, long dull lessons, heavy punishments, lack of freedom, responsibility, and activity, and unsympathetic teachers.

MULTIPLE LEARNING

We never learn one thing at a time, but always several things together.

Children learn not only what we put in our notes of lessons. They learn from the words we choose, from our movements, from our attitude to themselves and our attitude to our work.

In fact children learn a great deal from their teachers that would mightily surprise some teachers if they knew about it.

Children learn also from the beauty or ugliness,

good or bad arrangement, of the school compound and buildings, furniture and decorations.

When we take a lesson they are not only learning the subject, they are also learning to like or dislike the subject.

They will be developing an attitude to their teacher, based partly upon their attitude to one or other of their parents, which will affect for many years to come their attitude to those in positions of authority.

They will be developing an attitude to schools and schooling which will affect their future attitude to earning in general.

They will be learning to be sincere or insincere, and to say what they think and feel; or to hide and repress their thoughts and feelings.

They will be learning to cheat and lie; or to work honestly, tell the truth and shame the devil.

They will be learning to be active and independent, co-operative and creative; or to sit back and wait for others to tell them what to do next.

They will be developing self-confidence; or becoming more and more insecure and anxious.

They will be learning to do what they believe right because they see that in the long run it makes both for their own happiness and that of others; or to do what others believe right, for fear of what will happen if they do not.

They will be learning to be polite and considerate to all they have to do with, and to treat all men, women and children as children of God; or they will be learning to bow to the great and to bully the weak.

It is clear that learning such as this is at least as important as book knowledge and the passing of examinations.

Unfortunately, examinations are often so important

to our pupils that both we and they can easily forget the importance of these other aspects of learnings.

Yet if our work is to succeed, and if our pupils are to grow up into happy, healthy, and useful members of society, into good citizens, we must pay as much attention to these other forms of learning as we do to book learning : we must mind our P's and Q's as well as our A B C.

These other forms of learning obey all the laws of learning. They cause changes in the nervous system of our bodies. They are formed by practice with satisfaction. We must be careful then to see that desirable other forms of learning are as often as possible followed by satisfaction and undesirable ones by annoyance.

We cannot, in the end, make children learn ; but we can guide learning and encourage its proper development by doing all we can to ensure that right learning brings satisfaction and wrong learning is followed by annoyance.

Part VI : Methods of Learning

XXIV : Learning by Heart

MEMORY POWER IS INHERITED

Psychologists have found that there is for each of us a limit to the speed at which we can memorize a given amount of material, and to the length of time for which we can remember it.

These limits depend upon the quality of the brain matter each of us inherits from our parents. We each have a strong, average, or weak memory, and we cannot change it.

We may however be able to learn by heart more quickly, and remember what we have learned for a longer time, by using a weak memory in the right way than we could with a strong memory which we did not know how to use to the best advantage.

Actors who have memorized their parts in play after play for many years have found that however much they practise they can never reduce below a certain figure the number of minutes they need to learn a given number of words.

We cannot increase our powers of memorizing ; but we can improve our methods. We must therefore teach our pupils the best methods of memorizing, and we must make allowance for the difference between one child and another in memory power.

MEMORY MUST NOT REPLACE ACTIVE THOUGHT

It is often less trouble to memorize a passage without thinking than to find out exactly what it

means, above all when the language of the passage is not our mother-tongue.

Great men never memorize more than they can help : they put their time and their brains to better use. To them the important thing is to know where they can find any knowledge they are likely to need. It is usually easier and more useful to make a note of where any passage we may need again is to be found, than to learn it by heart.

This does not mean there should be no memorizing in school. We must memorize our ' twice-two-are-four ' and our ' c-a-t cat', and memorizing is useful in helping us to appreciate good verse and prose and to master the arts of speaking and writing a language.

Unfortunately examinations conducted in a language that is foreign to them still play an over-important part in the lives of many of our pupils. This makes it very difficult to keep memorizing in its proper place.

Through no fault of their own our pupils often have not the time to learn all they need to know about the subjects set ; they have to be content with memorizing the words in which to answer the questions they are likely to be asked.

When we set tests and examinations in school, we can and should make it impossible for children to write their answers from memory alone, without understanding the meaning of what they write.

We should usually allow our pupils to use in the examination room their text-books, note-books, and other books of reference.

The ability to make good use of these books is of far greater value and importance than the ability to remember the words that are in them.

We cannot blame the children for memorizing what they find too difficult to understand ; but it is a lazy,

passive way of learning which does no good either to mind or body.

All our methods, from the day the child first comes to school, should encourage activity, curiosity, self-confidence and independent thought, so that when children are faced with difficult material they are not content merely to memorize it.

UNDERSTAND BEFORE MEMORIZING

We shall memorize better, and avoid the danger of memory taking the place of active thought, if we always find out the meaning of our material before we memorize it.

It is clearly easier to remember something which makes sense, something we understand, than it is to memorize a more or less meaningless collection of words. 'The mouse ran up the stick' is easier to remember than 'stick the ran the mouse up'.

Good poetry for example is always 'difficult', because it has much meaning in few words ; so poetry should be read, discussed, understood, and enjoyed before we memorize it.

Understanding our material helps us to associate the ideas in it one with another, and with other ideas we already have, and this association makes memorizing far easier.

GIVE GOOD REASONS

Children must know why they are asked to memorize this and that, and the reason from their point of view must be a good one, if they are to memorize quickly and well.

For example children can see sense in memorizing their parts in a play. They will be interested in seeing which child or group of children can learn a passage by

heart in the shortest time, and in seeing whether they can memorize ten lines in fewer minutes this week than they could last.

It is once more a question of finding a purpose which has behind it some instinctive drive.

SET A GOOD EXAMPLE

The skill with which we present the material to be memorized, and our own feeling about the material, will have an important effect upon the children's will and ability to learn it.

If they see that we ourselves have learned a poem by heart because we think it worth learning, they will be more willing to do so themselves.

By our example we should encourage children to memorize passages they like because they enjoy and admire them, rather than to memorize passages they do not understand in case they need them in an examination.

LEARNING BY WHOLES

Tests have proved that if we have a passage of verse or prose to learn by heart, even if it is several pages in length, we shall learn it more quickly by reading and re-reading the whole passage than we shall if we divide it into parts and learn it part by part.

This is surprising, and children will find it difficult to believe ; but sufficient tests have been made, both with children and with grown-up people, to leave no doubt but that it is true.

The best method of learning by wholes has been found to run on the same lines as the ' practice and correction ' we use for learning a skill.

We read the whole passage straight through from beginning to end. Then we repeat as much of it from

memory as we can. We read the passage right through again, and try again to repeat.

Every re-reading is followed by an attempt to recall the passage until we can repeat the whole.

Working in this way we shall take between 10% and 30% less time to get a passage by heart than we should need to learn the same passage divided into two or more parts.

One reason why this ' whole ' learning is quicker than ' part ' learning is that when we have learned a passage part by part we still have to learn to connect one part with the next and to recall the parts in the right order.

Pyle and Snyder's Tests on Whole and Part Learning.

Number of lines of poetry	Time taken to learn by parts, 30 lines every day	Time taken to learn by reading straight through the whole three times every day
69 lines	81 minutes	64 minutes
120 lines	169 minutes	140 minutes
240 lines	431 minutes	348 minutes

(*adapted from Sandiford*)

When we learn some verse, for example, stanza by stanza, we often ' get stuck ' at the end of one stanza, wondering how the next begins.

Reading and re-reading the whole passage means that we are practising *all* the associations between the parts of the passage, and between the ideas in the passage, all the time we are learning.

Another advantage of ' whole ' learning is that it is more interesting than ' part ' learning. We keep the full value and meaning, the shape and plan of the

whole passage before us all the time we are learning it.

Further, our attention is equally divided over the whole length of the passage, whereas in learning by parts we are likely to spend more time on the opening lines than upon those nearer the end.

LITTLE AND OFTEN

Memorizing a passage is done better and quicker in several short sittings, with about twenty-four hours between them, than in one or two long sittings.

Experiments have shown, for example, that reading a passage through and trying to recall it eight times a day for three days, or six times a day for four days (24 times altogether), does not produce nearly such good results as reading the same passage only twice a day for six days (12 times altogether).

LENGTH OF PASSAGE

This rule of ' little and often ' will help us to find out the greatest length of passage our pupils can be expected to learn as a whole.

Experiments have shown that grown-up people can learn as many as 240 lines of verse nearly 20% more quickly by the ' whole ' method than they do if the passage is divided into parts and learnt part by part.

If, however, our children are to learn by reading and re-reading the whole passage, then the passage must not be so long that they cannot read it through and attempt to recall it at least once in every learning period. It is probably better if they re-read it, and attempt to recall it, at least twice, which means in practice that they should be able to read it through, without attempting to recall it, four times at each sitting.

All good teachers test their pupils from time to time to find out their reading speeds, the number of

words each pupil can read with good understanding in a given time.

If we find that the slower 20% of our pupils can read at the average rate of 100 words per minute, and we have a daily ten minute sitting for memorizing, then the longest passage we should set to be learnt as a whole will be $100 \times 10 \div 4$, that is 250 words or up to say 25 lines of Shakespeare. This will allow two readings and two attempts at recall, at every sitting.

With one reading, and one attempt at recall, they will be able to learn a ' whole ' of about 50 lines.

NUMBER OF READINGS

The number of times we should allow children to read through a passage in order to learn it by heart, or the amount of time and number of sittings we should allow them, we must find out by experiment.

A peculiar and important characteristic of learning by wholes is that it produces its results suddenly. Children may be hardly able to recall a passage at all after say ten readings, and then, after two more readings, they may find that they can recall it perfectly.

It is clear then that we must allow them enough time to make the number of readings they need to reach the stage of being able to recall the passage. If the time is too short, they will have nothing at all to show.

This is an important difference between ' whole ' and ' part ' learning. If when children are learning a passage by parts the time we give them in which to learn it is too short, they will have something to show for their work : they will know some parts of the passage even if they do not know it all.

We must then be sure to allow enough time ; but we want to encourage the children to keep their attention on their work throughout each sitting, and

to learn to memorize as quickly as possible.

So the time we allow should not be longer, and the number of sittings and of re-readings not greater, than is necessary to allow the slower pupils in the class or group to reach the stage at which they can recall the whole passage.

PROVING THE PUDDING

From the point of view of the pupils, learning by wholes has, at first sight, two serious disadvantages.

They find it very difficult to believe that it is, in fact, the quicker method ; and they may get discouraged when they find that after reading and re-reading a passage a number of times they can still recall hardly a line of it.

But the proof of the pudding is in the eating, and the best way of persuading children to use the whole method is to help them to find out for themselves, by experiment, whether ' whole ' or ' part ' learning is in fact the better method.

The first step in the experiment is for the teacher to find out how the children themselves learn by heart, how long they take and who are the quick and the slow learners.

The second step should *not* be to say, ' Now, you are learning by parts ; learning by wholes is a better way', but rather to say, ' Some people learn by wholes, and some by parts. Let us see if we can find out, by experiment, which method is in fact the better.'

This is a project which will awaken the children's curiosity and interest. The next step is to present very carefully the difference between the two methods.

We must make it quite clear that in learning by ' wholes ' the whole passage must be read straight through from end to end, and that after every reading

there must be an attempt to repeat the passage from memory.

We must also make it clear that when learning by wholes the children must not expect to be able to recall at each attempt more than the general sense, the ' story ' of the passage, and a few words here and there, until the very end of the learning process, when they will suddenly find that they can repeat the passage word for word from end to end.

They will sometimes find when they are learning by the ' whole ' method that when they go to bed after a number of readings they can recall hardly a word of the passage, but that when they wake up the next morning they can repeat it perfectly.

In our presentation we must be careful not to suggest which method is the better : that is what the children are trying to find out.

The next step is to discuss what experiments should be made. We must point out that whatever experiments we decide upon, each of them must be repeated several times before we have the right to base upon them any opinion as to which method is to be preferred.

We can divide the class into two groups of roughly equal ability, and set one group to memorize a passage by the ' part ', the other to memorize the same passage by the ' whole ' method, comparing the time taken by each group, the number of times the pupils in each have to re-read the passage, and the results as shown by their efforts to recite or write out the passage from memory.

Next we can set the whole class to learn a passage by the ' part ' method, and then to memorize another passage, of the same length and in all respects as much like the first as possible, by the whole method, and record and compare the times taken and the results.

Such experiments are of course of a rough and ready nature and cannot be expected to give us any idea as to how much better one method is than the other ; but if we organize them with care and intelligence and repeat them a few times they should be sufficient to show the children that the 'whole' method is the quicker way of memorizing a passage.

XXV : Suggestions on Study

If we can send our pupils out into the world with some idea of how to study for themselves we shall have given them a skill of real and lasting value.

WHAT, WHY AND HOW

We do few things well unless we first get clear in our minds what we want to do, why we want to do it, and how we are going to set about it.

Whether we propose to build a house, compile a dictionary, climb a mountain or write a letter, we shall do it better if we begin by sitting down and clearing our minds on these three points.

When children first come to school, we have to tell them what to do, and why, and how. But as they go up through the school they must learn to think these things out for themselves, and plan their own activities, with less and less help from the teacher.

THOROUGHNESS

How much work children do in a day is not nearly so important as how thoroughly the work is done.

We should refuse all work that is not done as well and as thoroughly as the children can do it. Children soon find out what sort of work we accept, and if we accept lazy careless efforts those are all we shall get.

We cannot expect perfection ; but if we always demand throughness we shall develop in our children the habit of thoroughness, and they will learn to enjoy

the feelings of pride and satisfaction that come from work well done.

ACTIVE READING

Children must learn to read and memorize actively. In memorizing this means, as we have seen, that they must first get at the meaning of the passage, and that they must recall as much of the passage as they can after each reading of it.

In reading a text or source book they must learn to look for the main subject of each paragraph, section, and chapter.

Small children can do little more than name the most interesting person or event in a passage they have read.

Older pupils can work exercises of increasing difficulty, leading up to such activities as note-making, summarizing, précis writing, and setting questions for use in revision.

Exercises of this kind encourage reading in order to get at the meaning rather than reading merely to memorize the words. They give practice in selecting the most useful and important ideas, the ideas the children need to carry out the purpose they have in mind.

In history for example children must learn to get from text and source books the knowledge they need in order to discuss some question in composition, examination answer, or classroom debate.

They can start with easy questions, using only their ordinary school text-book ; later they must learn to deal with more difficult problems, and to make use of their school and public libraries, and any other sources of knowledge they can get at.

Active reading means using books to get the know-

ledge we need in order to carry out a purpose we have in mind, and we must see that our pupils leave school able not only to read but also to use books to help them do things.

JUDGEMENT

We have to help our pupils develop powers of independent judgement.

They must learn to form their own opinions based upon their experience of life in general and upon the knowledge they have gained from their studies.

For example, they must learn to compare two or more accounts of the same event from different newspapers and to build up, from the various accounts they have read, their own account of what they believe did, in fact, take place.

When they read a book, a poem, a play, a story, or an article in a newspaper, they must be able to form properly reasoned opinions about what the writer is trying to do, about the truth and importance of what is said, and about the style and manner in which it is said.

A QUICK START

We must now consider a few practical details. First, children must learn to start work without waste of time.

It is very easy to allow our pupils to get into the habit of spending five or ten minutes at the beginning of a lesson getting ready their books and writing materials. It certainly means less work both for them and their teacher, but in a single school week whole hours may be wasted in this way.

We must also remember that what children do in class they will do in the examination room, where in

the case of a short paper five or ten minutes wasted may be a very serious matter.

WHAT TO DO FIRST

In the examination room, where time is limited, it is better to do the more difficult work first ; but when there is plenty of time, and work is spread over several days, it is better to do the smaller jobs and get them out of the way before attacking the bigger ones.

WORK QUICKLY

Children must learn to work quickly. Working too slowly means wasting time and does not usually produce the best results ; it is in fact as wasteful of time and effort as trying to work too fast.

The child who can read quickly can get a better view of the material as a whole, can re-read it more often, and has more time to think about it and answer questions on it.

We all have our own ' best ' speed for doing the things we have to do, and we should try to increase this speed by practice.

We should give our pupils regular tests of the number of words they can read, write, and memorize in a given time, and give special attention to children whose reading and writing speeds are noticeably below the average level of the class. An unusually low speed in reading and writing may seriously hinder the child's progress.

STUDY THE QUESTION AND KEEP TO THE POINT

' N.W.', ' not wanted ', is one of the commonest signs written by examiners on all kinds of examination answers from secondary school entrance to university finals.

To avoid deserving this comment we should read an examination question in three ways :—

1. To see what, in general, it asks.
2. To discover what, in particular, the examiner is looking for in the answer.
3. To see in what form and in what parts the answer is to be given.

Another help in avoiding 'N.W.' and keeping to the point is to divide our written work into parts and make up good titles or headings for each part. These titles and headings we can use as tests : what has to do with the title goes into our answer, and what has not must be left out.

Before they leave school children need plenty of practice in writing titles and headings for paragraphs, sections and chapters in what they read and write.

MNEMONICS

Special tricks for helping the memory, called mnemonics, are sometimes useful, but these, together with the verses we sometimes use as memory aids, are 'second best' methods which we should only use when all other methods have failed.

Examples of mnemonics are 'Eat Good Bread Dear Father', to help us remember the notes on the lines in the treble clef, or 'i before e except after c' as an aid to spelling words like 'believe' and 'receive'. A pretty memory verse is

'O Lady Moon, your horns are to the East,
Wax, be increased.
'O Lady Moon, your horns are to the West,
Wane and rest.'

STUDYING TOGETHER

Some teachers still feel there is something wrong

about allowing children to study together and help one another.

The reasons for this feeling can be found in the past. When teaching meant making the children do what they were told, whether they liked it or not, the chief means of getting them to work hard were competition for marks and the fear of punishment. Good marks meant prizes, praise and promotion, bad marks meant punishment.

Marks were to a child like profits to a trader. As in the world outside, so in school, the law of society was 'each for himself and the devil take the hindmost'.

Now that we are moving towards a world based on democracy, on co-operation between men and nations, on the love of our neighbours, it is time that the evil spirit of 'each for himself' should be driven from our classrooms.

For children to study together and to help one another in their studies is on principle desirable. We have to be careful, however, that this does not mean that the more able children do the work for the more backward, or that the lazier children leave the work to the more active.

SILENT READING

While study ought to mean doing a great many other things besides reading, without skill in silent reading no student will be able to get very far.

This is particularly true in a great but largely undeveloped country like Africa where many students are so far from any big centre of education that if they cannot learn from books and reading it is very difficult for them to keep in touch with modern knowledge.

Reading aloud has its uses, but few pupils have much use for it after they leave school, while silent

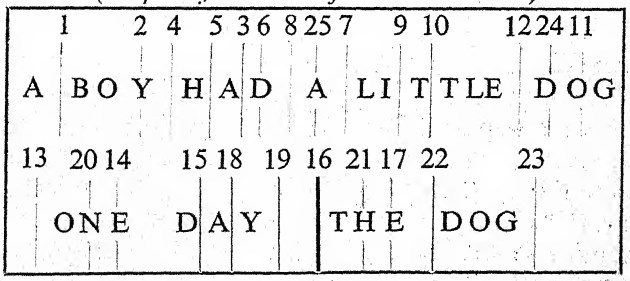
reading is a skill that is useful to us all throughout our lives.

In silent reading, speed is of great importance. Slow readers cannot read as much as fast readers, and in practice most slow readers read very little indeed, because for them reading is ' too much like hard work'.

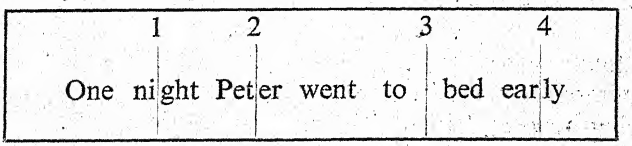
Moreover slow readers seldom take in and remember very much of what they read. This is because they read as if they were reading aloud, word by word, and have to pay so much attention to the *words* that the *meaning* often escapes them.

SILENT READING

(adapted from Sandiford and Buswell)



(a) How a slow reader's eyes move. Each upright line shows where the girl's eyes rested as she read. The numbers show the order of the rests. Her reading speed was nearly 40 words per minute.



(b) This reader read at nearly 370 words per minute. Notice that eyes go along the line without any backward movements, taking in more than one word at each forward jump.

A ' slow ' reader in this sense would be anyone over fourteen with a reading speed under say 200 words per minute, while a ' fast ' reader would be someone with a reading speed of somewhere about four hundred up to about one thousand words per minute for easy, interesting reading-matter.

The slow reader *looks at* the letters and words, and often lets the eyes go back for a second look at some word. The eyes of the fast reader jump forward from phrase to phrase, taking in several words at each jump and *looking for* the meaning of the phrases (for example, at a reading speed of 370 words per minute the reader takes in about two words at a time).

Reading speed can easily be increased by practice in reading the mother-tongue. In a language foreign to the reader it is not so easy to increase the reading speed unless this is first done in the mother-tongue, but it is by no means impossible.

In the upper classes of a primary school about ten minutes daily practice in the silent reading of easy interesting matter, followed by a few questions to make sure that what has been read has also been taken in, should make it possible for most pupils to leave their first school with reading speeds somewhere near four hundred words per minute.

Reading aloud is not practice in silent reading. It is the opposite of silent reading in that it forces us to attend to every word, whereas in silent reading we must attend rather to the meaning and pass over the unimportant words. Murmuring or mouthing the words when reading 'silently' is a sure sign of a slow reader, and all murmuring in children should be discouraged after about the end of their second year's work in learning to read.

XXVI : Learning by Doing

From what children hear and read in the classroom they can learn so much and no more. We know nothing properly until our knowledge has been put into practice.

'The house is 20 feet above sea level.' That seems easy; but go down to the shore, and look for 'sea-level'. The tide is now low. Is the house 20 feet above the present level of the water? In six hours time the tide will be high, the level of the water will be several feet higher. Is the house 20 feet above that?

I may know the meaning of every sign upon a page of music: this means B flat, played softly for half a beat, that means C natural, and so on. And I may know which is B flat and which C natural, upon the keyboard of the piano. But I may still needs some years of practice before I can play that page of music.

P. B. Ballard, in his *Handwork as an Educational Medium*, describes an interesting experiment.

In a certain London school the eight-year olds were divided into a brighter class, A, and a more backward, B, each of about 50 pupils. Both classes spent the same length of time on every subject, but they worked in different classrooms.

When the two classes came to learn fractions, some new apparatus was used, and for the purpose of the experiment it was used in one way in Class A and a different way in Class B.

In class A there was only one set of apparatus, and

the teacher used this to show the pupils what fractions were and how to handle them.

In class B, all the children made their own sets of the apparatus and used them themselves to find out, with the teacher's help, what they wanted to know about fractions.

At the end of six months Ballard set both classes the same test on what they had learned, and found that the average mark scored by the pupils in B was very much higher than the average mark scored by those in A.

The more backward class had learned more about fractions in the same time because the pupils in it had learned by doing something rather than by being shown and told how to do it.

Learning by doing includes learning to think as well as learning to do things with our hands, and it is not just one more method of learning: it is a necessary part of all learning, whether we are dealing with skill or with knowledge.

PURPOSE

We do not however learn just by 'doing'. We learn by doing something we want to do, something we can see some use in doing.

A psychologist once tried paying some men good wages to go to a heap of stones on one side of a field, carry the stones across the field, and make a new heap on the other side.

When all the stones had been carried across and the new heap made, the men had to carry them back and heap them again in the place where they had first found them. Then they had to do the same thing all over again.

The men had not carried the stones backwards and

forwards across the field very many times before they became so tired of useless work that they refused to do any more of it, in spite of the good wages they were getting.

This is the sort of feeling that children get if they have no opportunities to make practical use of what they learn in school : the work seems to them useless because they make no use of it.

We have then two principles : learning is not complete until we make active use of it ; and if we are to learn from using it, we must use it to do something we want to do, something we are interested in doing.

DOING AND MEMORY

Seeing, touching, tasting, smelling, and hearing the things we are learning about, and things connected with them, help us to remember what we learn.

Those who remember best what they see, with the help of ' pictures in their mind's eye ' are said to have a strong ' visual ' memory. Others, with a strong ' tactile ' memory, learn best from touching and handling, and others again have a strong memory for what they have heard, or auditory memory. Learning by doing helps us to develop our powers of using all our senses as aids to memory.

Pryns Hopkins points out in this connexion that the muscles of the body play a very important part in helping us to remember (kinaesthetic memory).

If we close our eyes, and let someone move our arms and legs while we let them hang loose and allow the other person do all the work, we shall hardly know what movements our limbs have made.

If however we use our muscles, either to help the person who is moving our arms and legs, or to try and keep them still, then we shall be able to remember how

they moved and to repeat the movements correctly.

In the same way, we remember what we have learned much better if we use as many different muscles as possible in learning it. For example, in reading about it we use eye-muscles ; in making notes upon it, we use the muscles of the hand and arm. Repeating it aloud uses the muscles which control our mouths, throats and breathing, while dramatizing it uses all the muscles of our body.

Pryns Hopkins in his *Aid to Successful Study* quotes Dr. Mace as saying, 'Much would tempt us to believe that the seat of the memory is not in the mind but in the muscular system.' It is clear that learning is not something that happens to us, or is done to us : indeed we cannot learn at all unless our bodies, as well as our minds, take an active part in the work.

PURPOSE AND INTEREST

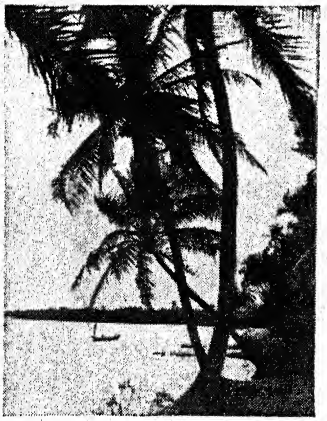
The connexion between purpose and interest is so important that we must study it a little further.

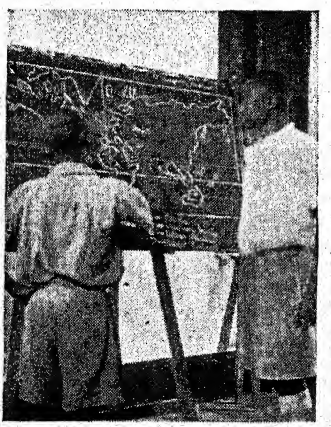
When we act with a purpose in view, we can distinguish five stages in our action :—

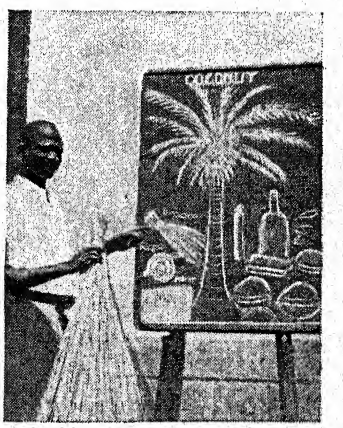
1. We desire to do something, and so we form the purpose of doing it.
2. We make our plans.
3. We carry out our plans.
4. We consider the result.
5. We correct any mistakes that we have discovered in our work as a result of considering the result.

All through these five stages we have been active ; and we have been learning : learning how to do something we wanted to do, and learning it by doing it.

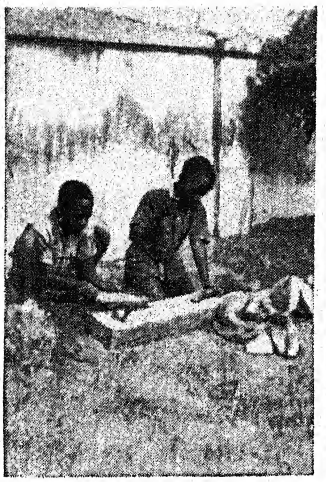
This is the Project Method which we have already mentioned. It is not really a method of learning : it is





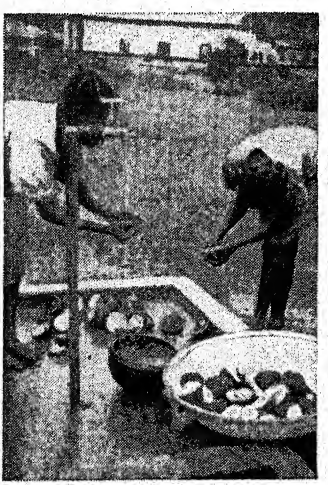


The stage is set. Many coconut palms grow near Lagos, and this school decides to base a project on the uses of the plant. Some work is done in the class room, discussing the parts of the world where the coconut grows, and what products people get from it. Both boys and girls share in the work that follows.

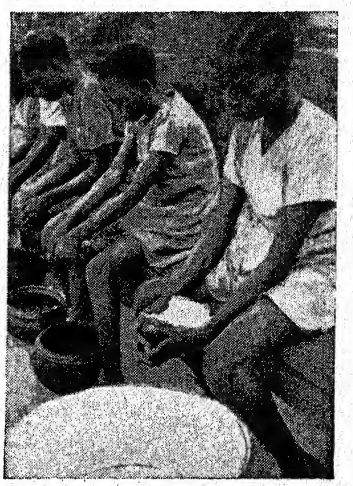


Boys smash the husks and remove the fibre—

which is plaited into strong rope. Mats can be made from this.



Girls cut open the nuts—



and scrape out the white meat.

Slow boiling, when the fine oil can be skimmed off.

Sampling the pure oil—

for use in hairdressing—

or cooking. Some of the girls have made sweets.

From the leaves come tough bristles for making brooms—

from the shells come cups that can be painted and carved.

The class has completed a study of the uses of the coconut palm through a wide range of practical activities supplemented by classroom work in geography.

rather a special way of going about the whole business of education. It has four basic characteristics :—

1. We begin with the children's own purposes, with needs and desires felt by the children themselves.
2. The teacher first discovers a need or desire in the pupils suitable to form the basis of a project, and then encourages and helps them to carry out that project.
3. A project is carried out by a class or smaller group of children working together.
4. Every class or group working on a project goes through the five stages set out above.

HOW PROJECTS TEACH

To carry out a project children need skill and knowledge.

For example, in order to get the necessary materials, they may have to write a letter to the head teacher asking for permission to use something that belongs to the school.

They have to decide how much of the various materials they need, and to measure up the materials so as to be able to give out the right amounts for each job.

This means to say that in order to get ready their materials, before even starting to carry out the project, they have already had to learn new knowledge, or make practical use of old knowledge of letter-writing, arithmetic tables, and practical measurement.

It is easy to see that in this way well-chosen projects can provide activity in nearly all the subjects usually taught in a primary or secondary school.

The ordinary time-tables and schemes of work will have to be set aside, but with a careful choice of

projects most of the knowledge and skills they cover can be learnt through projects, and what little is not so covered can still be learnt in the ordinary ways.

A project may take a few days, for example: 'To discover, report upon and have made safe every possible breeding place for mosquitoes within a quarter of a mile of the school.'

It may take some weeks or months, for example: 'How the Coconut is used in Tropical Countries.' The pictures given here show some stages in this project which was carried out recently in a Nigerian school.

It may take over a year, for example: 'To prepare a full report, based on daily observations and records, upon the weather in our town in the present year.'

In the primary school, projects will chiefly be centred upon handwork, upon making such concrete objects as a table or a small building. Arranging exhibitions of handwork and other entertainments for a parents' day form useful projects. The preparation of the ground and apparatus for an athletic sports meeting, and the organization of the meeting itself provide a useful range of activities.

The success of the whole Project Method depends upon the teacher's skill in discovering the needs and desires of the children, in helping them to select a suitable project based upon one of these interests, and in working up the children's interest into a strong desire and a firm purpose to carry out the project. Without this groundwork the whole project system loses its point and meaning and becomes a mere waste of time and effort.

XXVII : Learning and Fatigue

We must be on the look-out for signs of overwork and overtiredness, fatigue, in our pupils.

True fatigue must be distinguished from fatigue due to boredom. The signs of both are much the same, but whereas boredom can be cured in a short time by a change to some more interesting activity, true fatigue can be cured only by rest and sleep.

Well-fed children in good health who do not have a long journey to and from school will not be likely to reach the stage of true fatigue in ordinary school activities, except possibly as the result of taking too violent and prolonged physical exercise.

So long as our children are in good health they are much more likely to suffer from boredom than fatigue, to get ' tired of ' the work they are doing than to be ' tired by ' it.

Children will do excellent work under very unsatisfactory conditions, and suffer very little from fatigue, provided that the work is interesting. They will feel fatigue early and even when working under the best conditions if the work is dull and uninteresting. Good methods of teaching and of learning are the only methods of avoiding the fatigue that results from boredom.

At the same time, however good our methods, healthy children will work better, and the weaker and less healthy children and those who are passing through the more difficult stages of development will be given a

better chance, if we make the conditions under which they work as satisfactory as we can.

THE CAUSE OF TRUE FATIGUE

True fatigue sets in when our muscles have ' burned up ' their stores of ' fuel ' and are choked with waste products. Those waste products are removed by the oxygen which enters the blood-stream by the way of the lungs.

SEATING ARRANGEMENTS

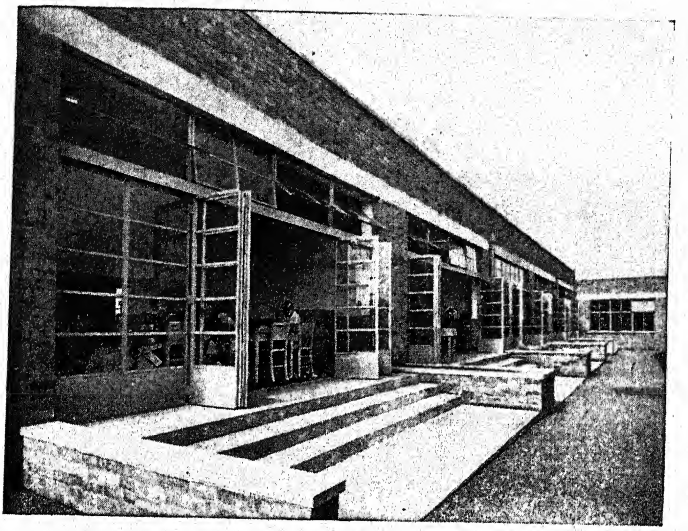
Making children sit or stand ' to attention, eyes front and backs straight' for more than a minute or so at a time is not good discipline but bad teaching.

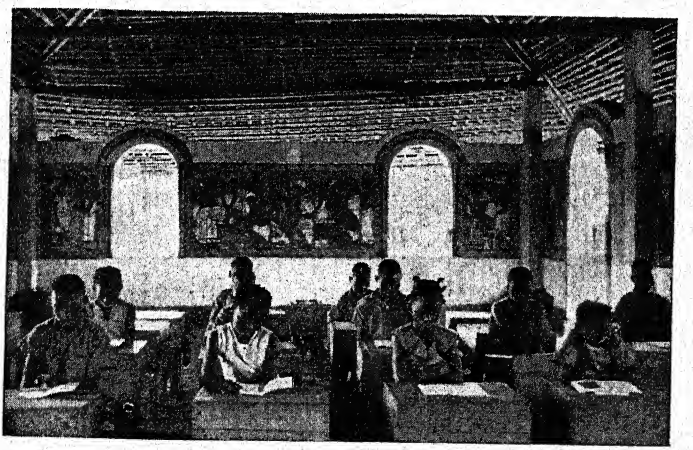
Sitting or standing still for any length of time calls for a great deal of muscular effort, and soon causes pain and fatigue. Sitting or standing ' to attention ' for too long is likely to make children hate both the teacher who makes them do it and the lesson in which they have to do it.

When children have to sit and read or listen, they should settle themselves comfortably in their seats, and change their positions reasonably often.

Comfortable writing and reading positions are most important. Every child should have a seat which allows the feet to rest firmly on the floor or foot-rest, with the thighs horizontal and the knees bent at an angle slightly greater than a right angle.

Children should have their own separate movable stools and chairs. If the seats are fixed, they must not be fixed too far from the desk, so that children are forced to bend forward to work. The front edge of the seat must not be more than two inches from a perpendicular line dropped from the nearest edge of the desk.





Two good schools. Attention is paid to air and lighting, to the seating of the children and the brightness of their classroom. Notice that in England much more window space is needed, because there is less light. In the Nigerian room, the frescoes were painted by the students themselves.

The height of the desk must be such that when the child is sitting in a comfortable upright position, the eyes are between 8 inches (for very small children) and 14 inches (for tall children) from their work. For general school purposes flat desks or tables are better than sloping desks.

We must be careful to see that children keep their eyes well up from their work when they are reading or writing. If the eyes are too close to the paper there will be eye strain (unless the child is near-sighted and needs glasses), there will be more mistakes because the child only sees a very small part of the work at a time, and there will be early fatigue because bending over the work makes breathing less deep and so the body gets less oxygen.

VENTILATION

Fatigue sets in more quickly if the body is overheated. In warm weather still air round the body becomes warmed and carries heat away from the body too slowly, so some movement of air in the classroom is desirable.

A strong breeze through the classroom may cause chill and discomfort. A well-planned classroom therefore allows the teacher to control the movement of air inside it by means of windows or shutters, and if possible with the help of a ceiling-fan.

In very hot, still weather, classes should be taken in the shade out-of-doors as much as possible.

LIGHTING

If there is not enough light on their work children tire more quickly and make more mistakes.

When work is done under a roof or ceiling it is difficult to have too much light, but the light must fall

in the right places, on the work and on the blackboard, and not in the children's eyes. As far as possible the light should come from the children's left and slightly behind them.

Dark walls and furniture absorb the light, so pale colours are best for classrooms. Blackboards absorb a great deal of light, and the Hadow Report (His Majesty's Stationery Office) suggests a yellow board with green chalk, which not only absorbs less light but is easier to read.

Children who prefer working in a bad light are probably suffering from eye trouble due to bad feeding and should be sent to the doctor or clinic for treatment.

NOISE

Noise is tiring. Even noise which we are so used to that we do not notice it still helps to hasten fatigue.

Noises from outside, especially in town schools, are difficult to avoid. But much of the noise inside schools is unnecessary, and can be greatly reduced by means of good teaching methods (busy children are seldom noisy) and by proper co-operation between members of the staff and between the staff and the head.

Teachers who teach too loudly tire themselves and their pupils. Those who do not speak loudly and clearly enough tire their pupils. The noisiest children are often those who are kept unnecessarily quiet for long periods.

THE WEATHER

In England it has been found that when there are too many bright fine days one after the other, or too many dull rainy days, work in schools falls off.

In many parts of Africa very long spells of fine or wet weather are common.

Teachers will probably find that school work improves if they take steps to break up the ' sameness ' of a long spell of fine or wet weather by occasional changes in the daily school routine.

For example, as we have suggested in connexion with self-activity, in fine weather educational visits and journeys can be undertaken, and in wet weather talks and lectures by people from outside the school can be arranged. In even a small village there are numerous places of interest—the Native Authority office, post office, police station.

Many outsiders who are unwilling to prepare a lecture will be willing to come and answer questions on their work or on some other subject in which they are interested. The children should in such cases prepare their questions beforehand, with the help of the teacher.

THE LENGTH OF LESSONS AND REST PERIODS

As children are seldom ' tired by ' a lesson, but often get ' tired of ' one, the length of a lesson can be determined by the length of time the work will hold the interest and attention of the children strongly enough for them to do it well.

This means that for some kinds of work fifteen minutes is too much while for others an hour is too little. The actual length must always depend on the kind of work the children are doing, and the stage of body-mind development they have reached.

No time-table ever made suited *all* the children it was made for. One great advantage of the project and assignment methods is that they allow children to fit their working periods to their needs and interests.

Physical training, singing, gardening, out-door games and so on will not relieve fatigue (in some

schools the physical training period causes more fatigue than any other) but they do ' make a change ' from classroom work and so relieve boredom.

As fatigue due to boredom is quickly relieved by a short rest, and work in the classroom improves in the last few minutes of a lesson when the children know that a ' break ' will follow, there should be at least three or four short ' breaks ' in the ordinary school day.

Whether we are dealing with fatigue due to boredom or with true fatigue, frequent short rests (provided that the rests are long enough) do more good than longer working periods followed by longer rests.

EVENING STUDY

It is a waste of time and effort to go on working too late at night. Such work often takes longer than necessary and even then it is not well done. Unfortunately, in the early stages of fatigue it is common for us to think we are working far better than we are, and this may explain why what we thought so good when we wrote it at midnight seems such rubbish when we read it next morning.

SLEEP

For true fatigue sleep is the only real cure.

How much sleep we need varies greatly from one person to another, and it also depends very much on how well we sleep, whether we are in good or bad health, whether the room is quiet or noisy, the bed too hard or too soft, too warm or too cold, and so on.

On an average we should allow nine or ten hours sleep a night for children, seven to nine for grown-up people.

Children from three to seven years old still need sleep in the day time, and many schools arrange for

such children to sleep in the school at mid-day.

We must find out for ourselves how much sleep we need. Experiments suggest that, for example, if for three nights we have only half the sleep we need, the quality of our work will fall off, and we may not recover completely from the effects of those three nights until we have had a full night's sleep every night for over a fortnight.

FATIGUE AND EMOTION

Trouble and unhappiness at home will often cause children to lose interest in their work and suffer from boredom and fatigue at school.

All emotions such as anxiety and anger affect our bodies and cause fatigue. This is one more reason why we must make sure that our pupils have a feeling of security at school, and we must learn all we can about the home life of every pupil.

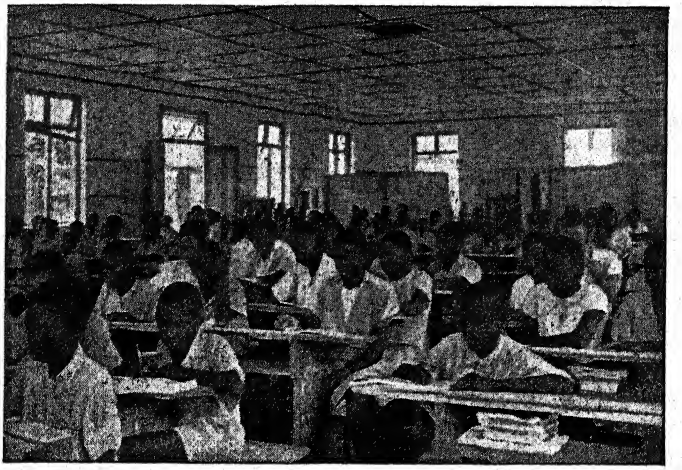
When children are moved by strong instinctive urges which are finding no satisfactory outlet in activity, any other activity they undertake will quickly tire them. They will be pulled in two ways at once, and this disturbance of the emotions will cause fatigue.

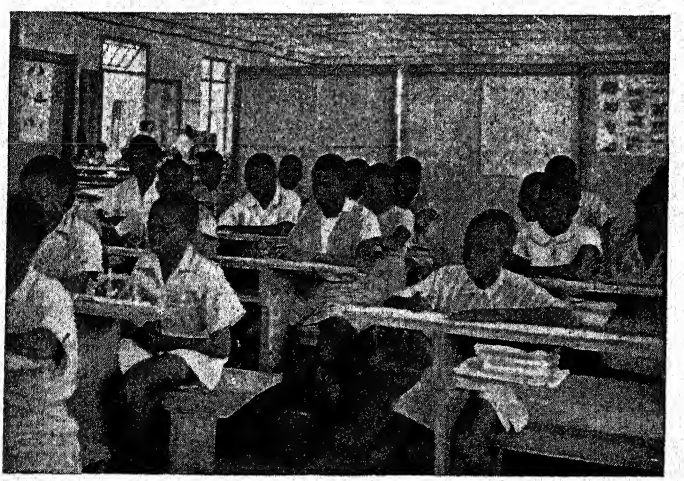
FATIGUE AND MATURATION

For this reason we must watch carefully which of the children's instinctive urges are strongest at their stage of development and provide outlets for those urges. Trying to teach children what they are not ready to learn will always result in boredom.

From about 4 to 7 and 11 to 14, children's bodies develop and change considerably, while their mental development, in comparison, is slower.

During these periods therefore they learn best from bodily activities such as handwork, but we must take





Making the best of local conditions. In this school several classes have to use a single large hall. Movable screens are easily made, and change the hall into a number of classrooms.

care that they do not over-tire themselves by such activity. We must consider bodily growth in itself a kind of work.

UNCONSCIOUS RESISTANCE

Teachers in several parts of the world have noticed that when pupils brought up by mothers with a strong belief in magic and witchcraft reach a certain stage in such subjects as geography and general science, they may suddenly lose interest and suffer from boredom and fatigue.

The point at which they lose interest seems to be the point at which the study of cause and effect in nature becomes important.

If this is indeed an 'unconscious resistance' to the study of cause and effect, the reason for it may be that in magic and witchcraft the ordinary laws of cause and effect do not operate, and that therefore the study of these laws will cause dissatisfaction and annoyance in anyone who has a desire to hold on to an unreasoned belief in magic.

In dealing for example with the causes of thunder and lightning, what the children learn in a geography, physics, or electricity lesson may well be quite different from what they have been taught in an illiterate home.

For this reason it has been suggested that if we want such children to learn to think scientifically, and in particular to study problems connected with cause and effect, it might be better, instead of teaching the ordinary general science subjects, to take such subjects as economics and sociology which do not deal so directly with those forces of nature about which children's beliefs are likely to be affected by their attitude to magic and witchcraft.

Part VII : The School and the Curriculum

XXVIII : The Objects of the School and the Principles Underlying the Curriculum

Before we can decide what to teach in schools we must know why we have schools at all and what in general a school is intended to do.

This is a democratic age. Parents, pupils, and the general public are going to ask us why we teach this subject and encourage that activity, and we must know the answers. Parents, pupils, and public opinion are not, on the whole, fond of change, and there is much in our schools that must be changed. If we want the public to accept these changes and to help us carry them out, we must be able to give good reasons for them.

To do our work properly we need the support of the parents and the public, and to get that we must be able to play our part in educating public opinion.

A proper understanding of the general object of the school will help us in our own work and make it more interesting. When we fail to get the results we expect from our teaching, we must first look for our own mistakes. But the mistakes may lie in the curriculum and general organization of the school, and if we do not understand the principles behind these we shall not be able to discover such mistakes and get something done about them.

THE OBJECT OF THE PRIMARY SCHOOL

Many parents and pupils look upon the primary school either as a place to learn to read and write, or as

a place where pupils are prepared to enter a secondary school.

Neither of these should be the chief aim, or the only aim of a primary school, if only because many of the pupils get no schooling other than primary schooling, and therefore the education given in the primary school should be as far as it goes a complete education.

Mere literacy, the ability to read and write, without any taste for learning or knowledge of how to learn, may be of considerable value to the children in helping them to earn a living, but it will do little to help them to develop to the full their powers of mind and body and become the men and women they have it in them to become.

THE OBJECT OF ALL SCHOOLS

We can perhaps describe the object of any school in these terms : to provide an environment suitable for the proper development of the pupils as individuals and as members of society during the time they are in the school.

In the school, children must learn from experience to deal with the world about them and with their fellows.

Psychologists have divided experience into three parts :—

(i) What men do (conation)
(ii) What men know (cognition)
(iii) What men feel (affect)

In the school therefore, children must have experience of doing what men do. The most necessary activities in man's history are those connected with food, housing, and clothing. Children in school must practise some at least of these activities.

They must also have experience of man's chief ways of knowing and thinking, of language, history, science and mathematics.

They must not be allowed to neglect man's chief ways of feeling and of expressing emotion. Plato taught that one aim of education was to learn to love what we ought to love, and hate what we ought to hate. This we learn chiefly by the experience, the enjoyment, of music, literature, and art.

THE INDIVIDUAL AND SOCIETY

The school must aim at turning out good citizens, useful members of society, people who can live, play, and work with their fellows in a friendly and co-operative spirit, individuals with good manners.

The development of the pupils as individuals and as members of society is in fact a single, not a double, line of development.

It is true I cannot do anything except as an individual, and by means of my own mind and body. But it is equally true that I cannot do anything without the help of others.

Take away from a man all he has got from others, speech, skill, and knowledge for example, and there is little left. He could not have been born.

On the other hand, the more I can do, the more I can do for my fellows. Proper development as an individual cannot be separated from proper development as a member of society.

THE PRINCIPLES UNDERLYING THE CURRICULUM

A consideration of the object of the school outlined above enables us to distinguish five principles which must underlie every primary and secondary school curriculum :—

1. The Forward-looking Principle

2. The Conservative Principle
3. The Creative Principle
4. The Principle of Preparation for Life
5. The Activity Principle

THE FORWARD-LOOKING PRINCIPLE

What children learn in school must help them to adjust themselves to the conditions of life in this world, and it must also give them the command of right knowledge and the habits of right feeling they need to enable them to change those conditions where they need changing.

The pupils of to-day are the citizens of to-morrow. We need citizens who believe in the possibility of progress towards democracy and are willing and able to work for that progress.

The work of the world must be carried on, and the world must be changed for the better.

In the past there has been a division of labour between those who carried on the work of the world and those who thought out and directed its progress. In a true democracy the division will disappear, and every man and woman will learn to share the work and responsibility of directing the progress of mankind.

This means that instead of the world being divided into those who carried on its necessary daily work, and those who had the leisure to develop their thoughts and feelings there will be more opportunity for fuller development for all men.

Progress is going to depend very much on how men learn to use the greater leisure that they will enjoy. Even to-day we judge people's education by the way in which they use their leisure.

This consideration must have important effects upon our curriculum. It means that we must in future

give far more attention than we have given in the past to such subjects as civics, which enable men and women to use their leisure in playing their proper part in directing the progress of mankind, and to such subjects as music, art, literature and handicraft, which enable us to use our leisure in emotional development and creative activity.

Browning wanted to see bakers painting pictures, and Lenin wanted every cook to learn to rule the state. Our curriculum must be planned so that both cooks and bakers will be able to enjoy both these kinds of activity.

THE CONSERVATIVE PRINCIPLE

To conserve things is to keep them as they are. Certain forms of skill and branches of knowledge have been taught in schools over and over again for centuries, and have formed the foundation of our civilization.

We look at the past to see what has been useful in the schools of the past, and we teach these things to-day.

This principle has its dangers. It is easy to imagine we are putting some subject into the curriculum for a good reason when the truth is that we are only putting it in because it has always been there in the past.

It is a very natural human desire to make our pupils do what we were made to do when we were younger, and we must be very careful not to allow this desire to affect our judgement as to what is, in fact, good for our pupils.

Past experience has taught us that reading, writing and number, history and science, art, music and literature are useful and necessary subjects ; what we do not even yet know enough about is when, where and how to fit these subjects into our curriculum.

This is because education in the past was chiefly a

matter of making children do what we thought good for them, fitting the child to the subject. We are only to-day learning that we must study children to find out what is in fact good for them, and fit the subject to the child.

THE CREATIVE PRINCIPLE

Our curriculum must include activities which will give the children opportunities to develop all their powers of mind and body, and to 'grow in wisdom as they grow in strength'.

We need subjects which will enable our pupils to satisfy their natural instincts to do things and make things.

What children do in school should strengthen and develop their natural interests, so that they will carry on the activities based upon those interests after they leave school.

There must therefore be a wide choice of activities, especially in the primary school, so that each child may have an opportunity of discovering a satisfactory form of activity.

We must also remember the law of maturation, and do our best to bring in the right kinds of activity at each stage of a child's development.

In accordance with this law, as much as possible of the work in the primary school should be centred upon handwork of some kind, because it is in the primary school years that children's desire to handle materials and to use their hands in making things is strongest.

If we fail to provide primary pupils with suitable opportunities for making things with their hands, large numbers of them will never learn to enjoy such activity at all.

THE PRINCIPLE OF PREPARATION FOR LIFE

Most people agree that schooling should prepare children for life ; but they differ greatly in their ideas as to what this means and how it should be done.

Primary and secondary schools are certainly not ' vocational ' schools, that is to say schools where children are trained to do some particular kind of work with a view to earning their living thereby. Our aim is to fit pupils for life, not for one particular job.

Nor must we regard the primary school only as a preparation for secondary schooling, and the secondary school only as a preparation for university studies. Again, our aim is wider than this.

Our first consideration in framing our curriculum must be that children are not being properly prepared for the next stage in their lives, whatever that stage may be, unless they are living to the full the life which is fitted to their powers and satisfies their instinctive urges, at their present stage of development.

The way to prepare children for to-morrow is to enable them to live well to-day. When we are choosing subjects to teach in the primary school, we must consider the interests and needs of children of primary school age, what the children need to-day rather than what they may need to-morrow.

Children must indeed learn what they need to know in order to be able to earn their living ; and certain children must be prepared for various entrance and matriculation examinations : but these are secondary considerations, things we may have to do as part of work, but not our main objects.

THE ACTIVITY PRINCIPLE

Life is growth. Growth has its stages, and each stage its particular needs. Growth takes place only

where there is activity in a suitable environment.

The curriculum therefore must provide the environment and the activities suitable to each stage in the children's development.

All authorities agree that the schools must never again be allowed to become places where children sit in rows, listen to their teachers, and do only what they are told to do.

The school must become a social group, a community made up of pupils and teachers living, working and playing together with the co-operation of the parents and the wider community which supports the school and is served by the school.

A social group only helps all its members to grow, to develop and to learn to co-operate when it is carrying out some useful activity, and when every member of the group takes part in that activity. Friendship, co-operation, and progress result when people are moving together towards the same object, not when they are standing still and looking one at another.

The whole aim of our curriculum therefore must be to provide useful activities which the children and their teachers will carry out together, with the support of the parents and the community.

The children's school activities will be of little interest and value to them unless what they do in school is properly connected with what they do out of school, in their towns and villages and in their homes.

As things are at present, what goes on in many schools is so different from, and so wholly unconnected with, what the children do outside the school, that children neither use in the classroom the mother-wit and the knowledge of the world they learn at home, nor practise outside the school any of the knowledge, skills and habits they gain in school.

This state of affairs is worst when the children use only English in learning at school and only the mother-tongue in their own home. It is not rare for such children to admit that what they do in school they think about in English, and what happens at home they think about in the mother-tongue.

Our curriculum therefore must aim at providing activities which will serve to unite home and school, child and parent, mother-wit and book-knowledge, and not, as so often happens to-day, divide them more and more sharply as the children go up from one class to another.

Finally and above all we must say once more that in order to provide the activities the children need, the curriculum must be, in educational jargon, 'child centred' and not 'subject-centred'. When children come to school they are full of interest and curiosity. The activities we choose for our curriculum must be activities which interest the children and satisfy their curiosity.

The subject-matter must indeed bring the children new knowledge and new experiences; but in choosing and arranging the subject-matter we must always consider first the needs and interests the children have already developed.

Each time the children experience something new, and learn from that experience, their needs are changed and their interests widened, and they are ready for further experience. It is in this way that their education goes forward, and it is upon this principle that our curriculum should be built up.

XXIX : The Subjects to be Included in the Primary and Secondary Curriculum

How can we do justice to the five principles considered in the last chapter without over-loading the curriculum ?

Already we hear complaints that we are trying to teach too many subjects. In many schools there is so much, and in so many different subjects, to be taught, that the children are confused and the teachers give up the struggle to teach and are content if the children memorize enough of their notes to pass their examinations.

The answer is that schools ought to be places, not so much where children learn things, but where they learn to learn things.

How children learn is much more important than what they learn, the quality of the learning much more important than the quantity.

We all have to learn our tables and learn to spell, but beyond such simple and necessary knowledge and skills, the important thing is that we should leave school with a lively curiosity, a desire to find out the truth for ourselves from our own observations, a knowledge of how to use books to find out what we know, of how to study and of how to think logically, and some training in the art of living and working with others.

The aim of the primary and secondary school is not to teach children a great many facts in, say, history or mathematics, but to teach them history and mathe-

matics in such a way that they become interested in them and able and anxious to study them for themselves.

HEALTH AND RELIGION

Health and religion must be taught at every stage both in primary and secondary schools. They are activities rather than subjects, activities which must receive attention throughout the school and in every subject, even if no special periods are assigned to them in the time-table.

The health of the pupils must be the concern of every teacher, because it is the foundation of all growth and development. Health may be taught as a special subject, or as a department of general science ; the important thing is that it must be taught as a way of behaving, a matter of right habits based upon correct knowledge.

Children must learn, for example, to sit and stand and walk and run and breathe correctly.

They must know what to eat and drink.

We must weigh and measure them regularly, and see that those who need it get proper medical attention.

We must see that they have proper opportunities for outdoor exercise, for rest, and for sleep.

Some health activities are best carried out as projects, or in connexion with the Red Cross or the Scout and Guide movements.

Religion is a more difficult matter, especially when our pupils belong to different religions or religious denominations. But even when no direct religious teaching and no community worship is possible, we can still develop the religious spirit in our schools.

Religion has two sides. There is the religious spirit, and there are the bodies of teaching and forms of worship by means of which each religion and

denomination seeks to develop that spirit.

The heart of all religious beliefs is belief in a supernatural power as the origin of a life that is worth living, and worth living as well and as fully as our powers and conditions allow. The religious spirit is a spirit of awe, wonder and admiration, the spirit which seeks out, and rejoices in, the good the beautiful and the true in all living beings and in the world about us.

This belief and this spirit should underlie every lesson and every other activity in every school.

HANDWORK

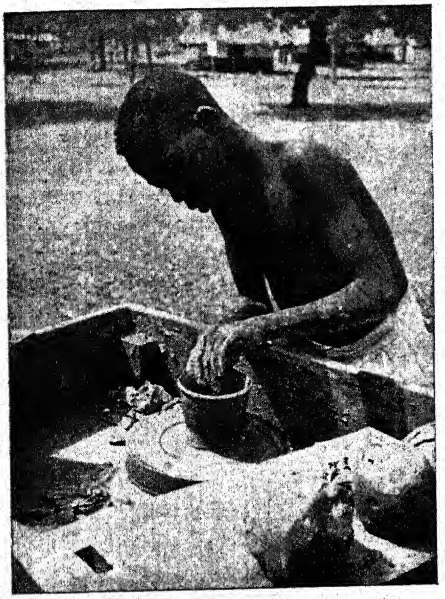
In the primary school handwork, organized as far as possible on the Project system, should be the most important activity, especially in the first three years.

Handwork should not be done with a view to making money, or learning to make money, but as a means of training hand and eye, of learning to make plans and to carry them out, and of enjoying creative activity.

We should not limit our handwork to such activities as woodcarving, basketwork or weaving. It should include also gardening or farming, drawing and painting. Even handwriting, through its connexion with drawing, can be enjoyed as a creative activity (see, for example, Marion Richardson's *Handwriting Course*, published by the University of London Press).

Man has been called a ' skill-hungry animal', and the pleasure of doing well some kind of handwork is necessary to the balanced development of mind and body. Drawing, painting and other manual activities are used to-day in curing many disorders of the mind and the emotions.

Many boys and girls do not like spending much time on handwork. They see that those who work with their hands are too often ill-paid and little



Useful Arts. Handwork loses its whole point and value unless the pupil makes something and enjoys making it.

respected. There are seldom many marks for handwork in entrance examinations.

For this reason it is most desirable that handwork should take its proper place in the curriculum of *every* school. It should begin early in the child's school life. It should be made enjoyable as a creative activity, and its usefulness in helping children to learn more 'bookish' subjects should be brought out as early anp as clearly as possible.

Handwork loses its whole point and value unless the pupil makes something and enjoys making it.

It is of far greater educational value for the children to make what they want to make, and to enjoy making it, however rough and imperfect the result, than for them to turn out some highly finished article in the making of which they take little interest.

We must always be on the look-out for those pupils who can learn little from books but are able to learn easily and quickly through handwork, and we must always try to find the kind of handwork best suited to each child's powers and interests. To be able to do this we need in our curriculum a number of different kinds of handwork, especially for the lower classes.

LANGUAGE

Language is a tool we need for thinking, for expressing ourselves in speech and writing, and for finding out the thoughts of others from their books or their spoken word. It must therefore have a very important place in the curriculum of all schools.

As children's knowledge and interests widen, they need a greater command of language in order to deal with them, so that language study must keep pace with the rest of the curriculum.

The whole question of language in the curriculum of African schools is in many parts of Africa so complex, and so hotly debated, that we can only suggest one or two principles for consideration.

Children certainly learn more quickly and easily, and it is easier to keep alive the connexion between their daily life and what we teach, if they learn in their mother-tongue.

In the history of mankind the greatest writers and thinkers have all done their thinking and writing in their mother-tongue. Many have done good second-rate work in a second language which they have learned later, Milton in Latin, Swinburne in Greek, Conrad in English, but on the whole the world's most important thinking and writing has been done in the mother-tongue of its author.

Every man and woman should be able to read with pleasure and profit some language in which the world's more important works of science and literature can be read. If these are not printed in our mother-tongue, then we must learn some language in which they are printed.

We cannot play a proper part in a democracy unless we can understand the language in which trade and government are carried on in that democracy.

It is of the greatest value when we are teaching to have a 'language of comparison'. If we want to find out if our children understand a word or a passage, one of the best ways to find out is to ask them to put it into another language.

For example, in some American universities, students learn Basic English so that their understanding of an English passage can be tested by asking them to rewrite it in Basic.

When we are teaching in English in an African

school we can in the same way test our pupils' understanding of a word or passage by asking them to explain it in their mother-tongue.

Many African languages have not yet caught up with the needs of modern thought. If teachers who speak such languages are anxious that they should be developed, then translation into those languages is the activity most likely to cause such development.

The translation of the Bible into English greatly developed the English language, and the translation of important works into the less developed African languages is likely to have the same effect on them.

What is translated must be the full meaning and value, the thoughts and feelings of the writer, and not merely the words or sentences.

Translation of this kind is a highly educative exercise worth a place in the language curriculum of every secondary school where the mother-tongue of the pupils is an African language but the language in which they learn is not.

OTHER PRIMARY SUBJECTS

The remaining subjects in the primary school will be music, arithmetic, everyday science (including such subjects as nature study and agriculture) and general knowledge (including geography, history, and civics).

SECONDARY SUBJECTS

In England, until recently, secondary education was considered as something quite distinct from elementary education. It was believed that only a few children could benefit from the training given in secondary schools. In order to discover those who were suitable, all elementary school children between 11 and 12 took an examination. On the results of this, places in

Secondary Schools were awarded.

However, during the present century, another idea of secondary education has been slowly gaining general acceptance: that all children would benefit from secondary education, if it were of the right sort; and that education was a continuous process, not something that changed its nature according to the age of the child.

In the Education Act of 1944, this idea found its expression. Three successive phases of education were marked out: Primary from 5 to 11, Secondary from 11+ to 16, or even 18, and Further Education after 18.

Since pupils differ greatly in their abilities and their interests, three distinct types of secondary school now exist. Children with academic interests will enter a grammar school, those with technical interests a secondary technical school, and the remainder (70% of the children) a secondary modern school.

The majority of children show no special ability towards either academic or technical studies; but under the right kind of instruction they will develop into useful and valuable citizens. The secondary modern school will provide suitable education for them.

In order to decide what kind of secondary school any child should enter, various tests of intelligence and attainment are made, and the school record-cards of the children are studied. This is normally done at the age of 11+, but since in some cases this may be too early an age at which to make a final decision, the opportunity is given for revising the decision at the age of 13+.

The curriculum of the old secondary schools (which are often known as Grammar Schools because the main subject studied was Latin grammar) was largely determined by the requirements of the School Certificate and Higher School Certificate examinations.

These will be discontinued in 1950, and a new General Certificate of Education will take their place, which, it is claimed, will give schools a greater freedom in choosing subjects for the curriculum.

Although grammar schools are for those with academic interests, their studies are being brought more into contact with the needs and activities of daily life. In the secondary modern school, the teaching is done, to a large extent, with the help of practical activities and many visual aids. There is as little as possible of formal class-room teaching, and every effort is made to interest the pupils in handicraft occupations, drama, art, music and any other such activities which will provide a basis for leisure-time hobbies and interests in later life.

Unfortunately, in England as in Africa, there is still a feeling in the minds of many that the ' collar and tie ' worker is more of a ' gentleman ' than a worker who uses his hands.

Unless great care is taken, dividing the secondary schools into three types, academic, technical and modern, will result in dividing the pupils socially into an ' upper ' or grammar school class, a ' middle ' or technical school and a ' lower ' or modern school class.

A remedy for this can and must be found, for, as A. Pinsent says, ' a skilled craftsman, engaged upon a piece of constructive craftsmanship, has to exercise a great deal more observation, taste, and intelligence, than a secondary school boy uses in memorizing mathematical formulae or rules of grammar.'

A sound democratic educational system must set out to develop the spirit of brotherhood and sisterhood and co-operation, and pull down the barriers that divide men and women into ' upper ' and ' lower ' classes.

Women at Work. The use of machines greatly lessens the importance of physical strength; and so men and women can do the same work. These pictures show women repairing telephones, ploughing by means of a tractor, and looking after a complex factory machine.

TOWN SCHOOLS AND COUNTRY SCHOOLS

It seems generally agreed that town and country schools should follow the same curriculum, though the work in some subjects, and especially the practical work, will have to show some differences.

In all schools the work done in school must be properly connected with the home life of the pupils, and this will mean some difference in the way we handle a number of subjects in the town from the way we handle the same subjects in the country.

In handwork again, the work done in the school will depend to some extent upon the materials which can easily be obtained, and the crafts which are common, in the district.

Apart from these necessary differences, the work in town and country schools should differ as little as possible. There is already far too wide and unhealthy a division between town and country.

The objects of both town and country schools are the same, and a town educated child may well go and live in the country and the country child go and live in a town.

BOYS AND GIRLS

Again, it seems to be generally agreed that there should be no unnecessary differences between the curriculum for boys and that for girls.

There is nothing to show that women are less intelligent, and less able to profit by education, than men. There is far more difference between a clever boy and a backward boy, or a clever girl and a backward girl, than there is between boys as a whole and girls as a whole.

The one important difference for which we must allow is that boys become fathers and girls become